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ABSTRACT

In a national study of individualized instructional programs for the U.S. Office of Education, Jack V. Edling of the Oregon State System of Higher Education, Corvallis, conducted an in-depth survey of 46 programs in 24 States. PREP kit, No. 16, reports on that study in 13 documents, covering such subjects as objectives of individualized instruction; diagnostic, instructional, and evaluative procedures; student progress reports, evidence of effects of individualized instruction; problems encountered; recommendations on implementation procedures; a bibliography; a list of current ERIC documents on as well as a list of materials for individualizing instruction; and case studies. PREP kit No. 16 is available from the ERIC Document Reproduction Service (EDRS). (Author)

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PREP

putting
research
into
educational
practice

PROBLEM ► RESEARCH ►

INTERPRETIVE REPORTS OF EDUCATIONAL RESEARCH AND DEVELOPMENT

Enclosed are specially designed materials on a topic of current interest to educators. The purpose of the materials, produced under U.S. Office of Education contracts, is to bring research and development findings to bear on the practical problems of educators.

Because OE is able to produce only a limited number of copies, the materials are designed so that educators can easily and inexpensively reproduce or adapt them to meet local needs, and distribute them in their educational communities. Other studies are being supported on problems now facing school personnel. As materials from these studies become available, they will be disseminated in the same manner.

Individualized Instruction Project Materials

Developed by Jack V. Edling, [illegible] Division, Oregon State System[illegible] by The Research Utilization B[illegible]

Case Studies

Number Requested

ELEMENTARY SCHOOLS

Urban Setting

____ 1. Downey Elementary, Harrisburg, Penn. (K6), **Individually Prescribed Instruction (IPI)**

____ 2. University Elementary, Los Angeles, Cal. (Ages 3-12), **Diagnosis and Prescription**

____ 3. G. S. Skiff Elementary, Phoenix, Arizona (1-6), **The Education Center**

____ 4. Pacoima Elementary, Los Angeles, Cal. (K-6), **Student Tutors**

____ 5. Parkview Elementary, Salt Lake City, Utah (K-6), **Adapting Materials to I.I.**

Suburban Setting

____ 6. Matzke Elementary, Cypress, Texas (K-5), **Basic and Applied Skills**

____ 7. Lakeside School, Merrick, New York (K-6), **Multidiscipline Learning**

____ 8. Mary Louise Aiken, West Hartford, Conn. (K-6), **Independent Learners**

____ 9. Brittan Acres Elementary, San Carlos, Cal. (K-6), **Project PLAN**

____ 10. Parkside Elementary, Murray, Utah (K-6), **Getting Started In I.I.**

____ 11. Martin L. King, Jr., Evanston, Ill. (K-5), **Teaching Teams**

____ 12. Meadow Moor Elementary, Salt Lake City (K-6), **Optimum Staff Utilization**

____ 13. Juliette Lowe, Arlington Heights, Ill. (K-5), **Learning Center**

____ 14. Kahala School, Honolulu, Hawaii (K-5), **Independent Study**

____ 15. Granada Community School, Corte Madera, Cal. (K-6), **Prescribing Individual Programs**

____ 16. Shaw Butte, Phoenix, Arizona (1-8), **Individual Curriculums**

Rural Setting, Large District

____ 17. East Elementary, Tooele, Utah (K-6), **Continuous Progress Plan (CPP)**

____ 18. Wilson Elementary, Janesville, Wis. (K-6), **R and I Unit**

____ 19. Franklin Elementary, Greeley, Colo. (K-6), **Personalized Teaching**

____ 20. Southside School, Durham, N.C. (1-3), **Individual Growth**

____ 21. Barnsley Elementary, Rockville, Md. (K-6), **Learning Stations**

____ 22. West Dover Elementary, Dover, Del. (1-4), **Individually Prescribed Instruction (IPI)**

Rural Setting, Small District

____ 23. L. E. Berger Middle School, West Fargo, N.D. (5-8), **Low Cost Individualized Instruction**

____ 24. Cashton Elementary, Cashton, Wisc. (K-8), **I. I. in Conventional Classrooms**

SECONDARY SCHOOLS

Suburban Setting

____ 25. Skokie Jr. High, Winnetka, Ill. (6-8), **The Learning Laboratory**

____ 26. Oak Avenue Intermediate, Temple City, Cal. (7-8), **Objectives**

____ 27. Southwest High, Green Bay, Wis. (9-12), **Learning How to Learn**

____ 28. Urbandale High, Urbandale, Iowa (10-12), **Relevance in Education**

____ 29. Harry A. Burke High, Omaha, Neb. (10-12), **Investing Time Wisely**

____ 30. Hillsdale High, San Mateo, Cal. (9-12), **Improving Basic Skills**

____ 31. Miami Springs High, Miami Springs, Fla. (10-12), **Freedom of Choice**

Rural Setting, Large District

____ 32. John Murray Jr. High, Pendleton, Ore. (7-9), **Changing Teachers' Objectives**

____ 33. Roy High School, Roy, Utah (10-12), **Independent Study**

____ 34. Huron High, Huron, S.D. (10-12), **Getting Started in I.I.**

____ 35. John H. Glenn Jr. High, San Angelo, Texas (7-9), **Organizational Innovations**

____ 36. J. E. Gibson High, McComb, Miss. (9-12), **One Subject at a Time**

____ 37. Melbourne High, Melbourne, Fla. (10-12), **Non-Graded Curriculum**

____ 38. Milton Jr. High, Milton, Pa. (6-8), **Multi-Mode Instructional Programs**

____ 39. Kauai [illegible]
Ru

____ 40. Grand [illegible] (10-12)

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Developed by Jack V. Edling, Project Director, Teaching Research Division, Oregon State System of Higher Education, Supported in Part by The Research Utilization Branch, U. S. Office of Education

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tiss. (9-12), **One**

a. (10-12),

8), **Multi-Mode**

____ 39. Kauai High, Kauai, Lihue, Hawaii (7-12), **Reading**

Rural Setting, Small Districts

____ 40. Grand View High School, Grand View, Idaho, (10-12), **Learning Resource Center**

____ 41. Haxtun High School, Haxtun, Colo. (9-12), **I.I. in Career Selection**

TOTAL PROGRAMS K-12

Urban Setting

____ 42. Duluth, Minn. (K-14), **Functional Total Program**

____ 43. Punahou School, Honolulu, Hawaii (K-12), **I.I. by Individual Teachers**

Suburban Setting

____ 44. NOVA-S. Florida Educational Center, Ft. Lauderdale, Fla. (1-14), **Learning Activity Packages (LAP)**

____ 45. DeKalb County Schools, Decatur, Ga. (K-12), **Centralized Science Facilities**

____ 46. Niskayuna School District, Schenectady, N.Y. (K-12), **Self-Directed Instruction**

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____ 3. Individualized Instruction: Diagnostic and Instructional Procedures

____ 4. Individualized Instruction: Its Materials and Their Use

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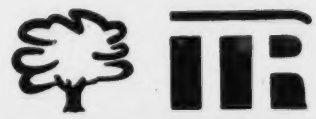
11

Emphasis:
Teaching Teams

Martin Luther King, Jr.
Laboratory School
Evanston, Illinois
(Suburban, Elementary)



INDIVIDUALIZED INSTRUCTION

. . . Horizontal Collegial Teams, Vertical Curriculum Teams, and Specialist Teams

"A teacher may talk to a whole class, but learning is an individual process. A group listens, but a child learns individually. And he will only learn what seems important for him. Education for today's child must be individualized, relevant, and exciting."

The speaker, Dr. Gregory C. Coffin, is Superintendent of School District No. 65, Evanston, Illinois. His district's Laboratory School, an elementary school, began full operation in September, 1967.

The Laboratory School in Evanston had been Foster Elementary, a school with all black enrollment until 1966. In that year an integrated laboratory kindergarten was begun. The institution of the laboratory kindergarten was the first step in Evanston's program for the integration of its elementary schools.

In 1967, the lab school extended through the 5th grade. Parents were given the opportunity to enroll their children. Of the 900 applicants 600 were selected. Those children who were chosen represented a cross section of racial and socio-economic groups, a "microcosm of Evanston." Teacher selection was made from volunteers who asked to teach in the lab school. Each of the 24 teachers was screened and chosen for his professional skills. Students from Northwestern University volunteered to act as assistants.

What Are the Goals of the Program?

Martin Luther King's principal, Corinne Schumacher, describes the purpose of the program: "Everything we are doing in the laboratory school—our organizational structure and instructional patterns—exists because we think the student will benefit from individualized instruction. Our goal of individualization is achieved through flexible programming, team teaching, use of specialists, modern teaching 'tools', and research into children's learning methods and learning problems."

Martin Luther King, Jr. Laboratory School
Evanston, Illinois
(Suburban, Elementary)

Emphasis:
Teaching Teams

Prepared by
Jack V. Edling
with the cooperation of
Corinne Schumacher, Principal,
and the staff of
Martin Luther King, Jr. Laboratory School

and an editorial team
composed of
James Buck
Russell Sadler
Richard Schultz
Ann Stineff
from the Teaching Research Division
Oregon State System of Higher Education

No. 11 of 46 Case Studies

What Instructional Techniques Have Been Used to Achieve These Goals?

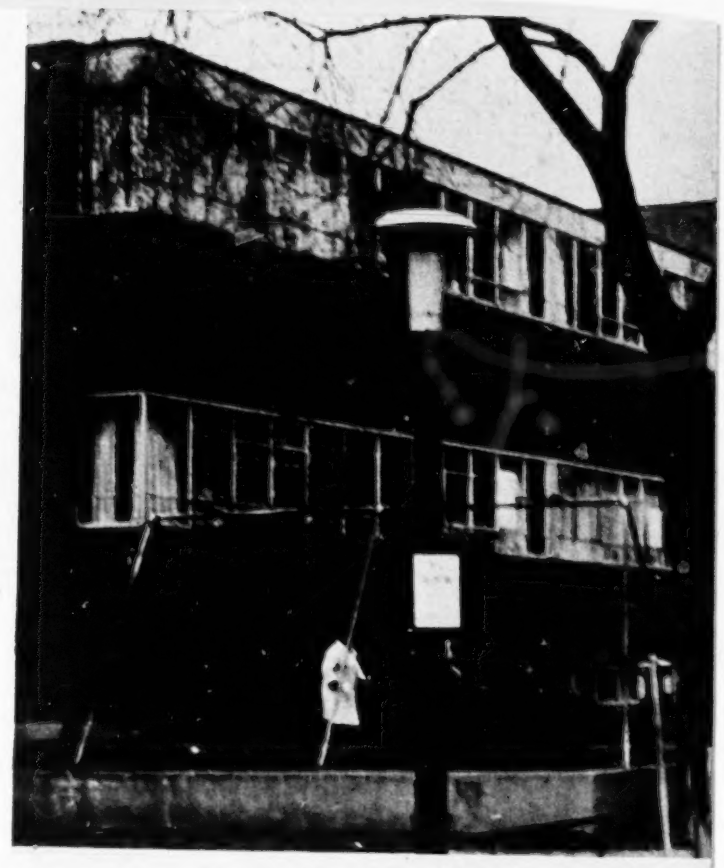
Flexible programming allows the use of team teaching which is the basic "tool" for individualization at the Lab School. Teams are comprised of four teachers, and each team is assigned a pupil population equal in boy-girl, black-white ratios. Although student assignment is not based entirely on grade levels, each team is responsible for a grade group with two teams responsible for K-2, two teams for 1-3, and two teams for 3, 4, 5.

Evanston's contribution to team teaching is the creation of three types of teams: horizontal collegial teams, vertical curriculum teams, and a specialist team.

Horizontal Collegial Teams—A collegial team is one whose members are on an equal footing with each other; they are "colleagues." On the collegial team, each of the four members assumes a leadership role in one of four academic areas: Social Studies, Science and Health, Mathematics, and Language-Arts. If a teacher has a leadership role in Mathematics, he is responsible for organizing, planning total units, and leading large group instruction in this subject area. In turn, he becomes a follower in organizing the remaining three disciplines.

Vertical Curriculum Teams—Each teacher on a collegial team takes major responsibility for planning one subject area, usually his area of strength. Vertical curriculum teams are made up of the six teachers, one from each collegial team, who are responsible for the same subject area. For example, the collegial team member whose specialty is science meets with his counterparts from the other five collegial teams. Together they coordinate the science curriculum, meet with lay resource people skilled in science, plan with vertical curriculum teams from the other academic areas, and channel appropriate media through the resource center director.

Communication and feedback are constant among vertical and horizontal teams, the research director, and the other schools in the district. Vertical curriculum teams are largely responsible for this successful communication.



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Specialist Teams—Title III funds have allowed the Lab School to hire extra full-time personnel, called "specialists," for music, art, drama, and physical education. They form a single team and coordinate activities which in the past have been fragmented throughout the school day. They meet as a team daily for planning and teach during a class's collegial team planning period, usually a 40-minute period.

The specialist team's goal is to provide children with an opportunity to develop their talents, pursue their interests, and receive specialized, concentrated training in music, art, drama, and physical education.

What New Skills Must A Teacher Acquire To Be Effective in the Program?

Teachers at Martin Luther King must have

Martin Luther King, Jr. Elementary School provides an example of the advantages of the teaching team for individualizing instruction.

responsible for this successful communication.

Specialist Teams–Title III funds have allowed the Lab School to hire extra full-time personnel, called "specialists," for music, art, drama, and physical education. They form a single team and coordinate activities which in the past have been fragmented throughout the school day. They meet as a team daily for planning and teach during a class's collegial team planning period, usually a 40-minute period.

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What New Skills Must A Teacher Acquire To Be Effective in the Program?

Teachers at Martin Luther King must have an area of strength in math, social sciences, language arts, or science in which they are willing to take the major responsibility for planning and directing team colleagues. They must also be willing to work under the direction of team members in the other academic areas.

What Costs Are Involved in the Program?

The lab school was granted Title III funds totalling $125,000 in 1967, $95,000 for 1968, and $53,000 for 1969. This money supports the specialist program in part and pays the salaries of the six teacher aides hired to help each collegial team.

What Problems Were Experienced in Developing the Program?

Miss Schumacher, the school's principal, comments, "When a school completely re-

From Other Case Studies—

"Pupils in IPI spend most of their time working independently. They must be self-directed and make many decisions and plan their own activities as often as possible."–from Case Study 1.

"In the first year of the seven-year developmental plan, each kindergarten classroom received eight tutors from one fifth grade classroom."–from Case Study 4.

"When in the classroom, the children go to the box, pick out the concept they wish to work on that day, read the information, and attempt to work the problems."–from Case Study 5.

"The school staff has found that their program requires a wider variety of materials than the traditional educational setting."–from Case Study 8.

"In addition to enthusiasm, the students have gained proficiency in research and reporting methods."–from Case Study 14.

"There was some negative reaction from different people within the community. This has been alleviated through orientation programs specifically designed to acquaint the community with the objectives of the educational system and with terminology used in a Continuous Progress Plan."–from Case Study 17.

"A teacher is requested to become a director of instruction instead of a classroom teacher. As a director of instruction, he has a staff, facilities, and services on demand."–from Case Study 19.

"The center provides new possibilities for learning experiences through the use of tape recorders, video tapes, listening booths, overhead projectors, films, and other hardware."–from Case Study 40.

"With the acquisition of video tape recorders, Punahou provides auditory and visual learning in addition to the symbolic associations taught in traditional instruction plans."–from Case Study 43.

organizes, there are bound to be difficulties. We started with self-contained classrooms, an all-Negro population and changed to non-grading, team-teaching, and an integrated population. We have also organized a 'micro-community council' made up of students, parents, and teachers who consider problem areas. This council is not just a discussion group but an effectual decision-making body of some power. Hopefully, the council will solve many existing problems and those which may arise in the future."

Summary

The Evanston District No. 65 Laboratory School is a smoothly functioning school which relies on a totally supported program of individualized instruction. Backed by commitments from administrators, teachers, and parents, the laboratory school has developed an effective atmosphere for meeting the needs of individual students. The individualized instruction program is a reality.

Perhaps the outstanding feature of the laboratory school is the organization of the teaching teams into three areas: horizontal collegial team, vertical curriculum team, and a specialist team. This kind of organization provides for continuity in curriculum, better communication between staff members and the community, teaching by specialists, time for team-planning, and combining the subject-area strengths of four teachers in a team effort.

Every aspect of this system encourages individualized achievement. The school reflects Superintendent Coffin's opening remarks about education, " . . . education for today's child must be individualized and relevant and as exciting as we can make it."

Laboratory School brochures and descriptions of specific programs are available by contacting Miss Corinne Schumacher, Principal, Martin Luther King, Jr. Laboratory School, 2010 Dewey Avenue, Evanston, Illinois 60201.

This is one of 46 brief reports on individualizing instruction which were prepared to inform the reader of instructional developments in schools. It was prepared pursuant to a contract with the United States Department of Health, Education and Welfare, Office of Education. Publication does not represent endorsement by the U.S. Office of Education or any other agency.

Information on obtaining copies of the other reports in the series is available from the ERIC Clearinghouse on Educational Media and Technology, Institute for Communication Research, Stanford, Calif.

PREP BRIEF

No. 16

INDIVIDUALIZED INSTRUCTION

In contrast to traditional instruction that has been oriented toward a group or class, individualized instruction is oriented toward the child. Once appropriate learning experiences are identified, instruction is mainly self-directed, self-administered, and scheduled within the school's broad time constraints, at a time convenient to the learner.

As with so many "new" techniques, there are those who question the value of the individualized instruction method; others are bluntly skeptical. But, the traditional system does not work very well for some students either, and many teachers are dissatisfied with existing arrangements. There is little evidence at the present time to indicate which orientation promises the greater long-term benefits. Nonetheless, schools which have moved from traditional to individualized instruction universally agree that they would never return to a group orientation.

Some Advantages Found in the Individualized Instruction Approach

- Student response generally has been positive.
- Teachers report that, while they are working harder than before, they are more satisfied.
- Traditional disciplinary problems virtually disappear and attendance is improved.
- Teachers note their students' renewed interest in academic activities and in school in general.
- The enthusiasm of students is being passed along to parents, and the favorable experience of teachers and administrators is being acknowledged by school boards.
- Schools with these programs are receiving renewed attention, encouragement, and approval from their communities.
- Some administrators believe that, once the transition is made, individualized instruction may be a partial solution to or provide a means of slowing down spiralling school costs because it provides an opportunity for more efficient utilization of teachers and support personnel.

General Arrangements of Individualized Instruction

To refer to individualized instruction as a single, uniform procedure is, of course, totally unwarranted and incorrect. The implementation of the orientation toward the individual, instead of toward the group or class, takes

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE / Office of Education

National Center for Educational Communication

many forms in actual practice. The names given below have no particular status or consensus. The essential point is that the administrator should not let anyone convince him that there is only one way to individualize instruction. There are many different yet effective programs, and most schools which have or are making attempts to individualize their programs employ variations of each arrangement described.

- *Individually Diagnosed and Prescribed*--In all instances behavioral objectives are clearly specified, and defined systems of materials and methods of instruction have been developed to enable learners to reach specified behaviors. As in all individualized instruction, the pace of instruction is determined by the individual.

- *Self-Directed*--These programs are characterized by well-developed testing programs, clearly stated curriculum goals, and by well-equipped and -developed learning resource centers or learning laboratories where a wide variety of materials are available. Self-directed instruction is based on the belief that each individual's strengths and learning styles are unique, and that any preconceived sequence or system does the learner an injustice, denying him the freedom to fully develop his individuality by prescribing activities which he should be learning to prescribe for himself.

- *Personalized*--The learner identifies personal learning objectives. Like independent study, personalized instruction is usually found in science, social studies, and elective courses, whereas the former types are most commonly associated with required subjects such as language arts and mathematics. Individual student interests are the primary factor in selecting objectives, but once selected, the student follows a directed program with specified materials.

- *Independent Study*-- The learner independently determines both learning objectives and the means to attain them. Like the self-directed programs, independent study is reserved more frequently for the above-average learners.

Considering Implementation Procedures

If the school administrator believes that programs should accommodate the requirements of learners, and that present programs do not accommodate learners to the degree that they should, then it is incumbent upon him to determine whether new procedures merit adoption. Individualized instruction is one new procedure he should perhaps consider.

For More Information

In a national study of individualized instructional programs for the U.S. Office of Education, Jack V. Edling of the Oregon State System of Higher Education, Corvallis, conducted an in-depth survey of 46 programs in 24 States.

A PREP kit, No. 16, reports on that study in 13 documents, covering such subjects as objectives of individualized instruction; diagnostic, instructional, and evaluative procedures; student progress reports, evidence of effects of individualized instruction; problems encountered; recommendations on implementation procedures; a bibliography; a list of current ERIC documents on as well as a list of materials for individualizing instruction; and case studies.

PREP kit No. 16 will be made available from the ERIC Document Reproduction Service (EDRS).

PREP

INDIVIDUALIZED INSTRUCTION

No. 16

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- *a method of getting significant R&D findings to the practitioner quickly*
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  R *esearch into*
  E *ducational*
  P *ractice*

In a national study of individualized instructional programs--conducted by Jack V. Edling of the Oregon State System of Higher Education, Corvallis, for the U.S. Office of Education--46 programs in 24 States were surveyed in depth. This PREP kit reports on that study.

The kit briefs school administrators and board members on the many approaches to individualizing instruction and tells of the experiences of those who have inaugurated such programs. Finally, it provides data upon which administrators and board members can make informed decisions concerning individualized instruction for their own schools or school districts.

The kit contains 13 documents:

No. 16-A - Individualized Instruction: An Overview
No. 16-B - Objectives of Individualized Instruction
No. 16-C - Diagnostic Procedures
No. 16-D - Instructional Procedures
No. 16-E - Evaluative Procedures
No. 16-F - Student Progress Reports
No. 16-G - Evidence of Effects of Individualized Instruction
No. 16-H - Problems Encountered
No. 16-I - Recommendations on Implementation Procedures
No. 16-J - Case Studies
No. 16-K - Materials for Individualizing Instruction
No. 16-L - Bibliography on Individualizing Instruction
No. 16-M- Current ERIC Documents on Individualizing Instruction

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IPRIP

No. 16A

INDIVIDUALIZED INSTRUCTION: AN OVERVIEW

How It Differs From Traditional Instruction

Traditionally, instruction has been oriented toward a group or class. Common assignments are given to all members of the group; and if individual projects are assigned, all students are expected to complete their projects on the same specified date. Thus, these student learning experiences are group-oriented, teacher-paced, and scheduled at a time convenient to the teacher and the school.

In contrast, individualized instruction is oriented toward the child. Appropriate learning experiences are assigned each student. In order to determine what is "appropriate" for each learner, some type of diagnostic procedure is used. Once these learning experiences are identified, instruction is mainly self-directed, self-administered, and scheduled, within the school's broad time constraints, at a time convenient to the learner.

Reactions To Individualizing

Many school administrators believe and state that such a system will not work well for some students and some teachers. They are probably correct. But, the traditional system does not work very well for some students either, and many teachers are dissatisfied with existing arrangements. There is little evidence at the present time to indicate which orientation promises the greater long-term benefits. Nonetheless, schools which have moved from traditional to individualized instruction universally agree that they would never return to a group orientation. However, some teachers in these schools discovered that they were unable to cope with individualized pacing, and they reverted to traditional procedures. In defense of their reactions it should be stated that, had these teachers been given adequate training, materials, and support, their behavior might have been different.

The favorable reaction of schools which have made even a partial transition to an individualized instructional program may be attributed to a number of factors. First, student response generally has been positive.

Some students have difficulty in making the transition, and others try to discover ways to take advantage of it; but most act as if it were too good to be true. Second, teachers report that, while they are working harder than before, they are more satisfied. Traditional disciplinary problems virtually disappear and attendance is improved. The teachers also appreciate their students' renewed interest in academic activities and in school in general. Third, the enthusiasm of students is being passed along to parents, and the favorable experience of teachers and administrators is being acknowledged by school boards. Thus, schools are receiving renewed attention, encouragement, and approval from their communities when previously they had been more or less accepted as a necessary community responsibility. Finally, some administrators believe that, once the transition is made, individualized instruction may be a partial solution to or provide a means of slowing down spiralling school costs because it provides an opportunity for more efficient utilization of teachers and support personnel. While traditional instruction places emphasis on teacher-student ratio, individualized instruction places increased emphasis on student self-direction, instructional technology, and appropriate use of paraprofessionals.

Types of Individualized Instruction

To refer to individualized instruction as a single, uniform procedure is, of course, totally unwarranted and incorrect. Although the general orientation is the same, i.e., toward the individual instead of the group or class, the implementation of that orientation takes many forms in actual practice. All individualized instruction requires, by definition, individual pacing. If instruction is group-paced, it cannot at the same time be individualized. However, instruction may be individualized even though the school establishes common learning objectives. Thus, all children may have a requirement to learn to read, write, calculate, spell, and perform an extensive array of prescribed behaviors. And yet, if each child is given sufficient time to learn each objective, then instruction may be considered individualized even though all the children receive the same basic information and perform the same basic operations. Such instruction may or may not be efficient, but if each individual is allowed to set his own pace, then the instruction meets the essential criterion which differentiates it from group instruction.

Of course individualized instruction programs need establish neither a common learning objective nor the means to attain either common or unique learning objectives; but many programs do establish objectives and identify the means to achieve these objectives. Using these criteria, one can identify four general types of instruction, each of which has distinguishing characteristics - but all are commonly referred to as individualized instruction. The four types and their distinguishing characteristics are illustrated in figure 1.

MEDIA	OBJECTIVES: School-determined	OBJECTIVES: Learner-selected
School-determined	Type A Individually Diagnosed and Prescribed	Type C Personalized
Learner-selected	Type B Self-Directed	Type D Independent Study

Figure 1. *Types of individualized instruction*

The two basic issues in individualized instruction are *who* determines the objectives of instruction and the *means or media* to attain them. In both instances there are situations where the school is the primary determiner of both *what* and *how* the child shall be taught, and there are situations where the child is the primary determiner of either or both issues. Every experienced administrator knows that these matters are not clear cut or unequivocal in any situation, and this holds true in individualized instructional settings. But, there are basic points of view or philosophies expressed in each of the cells illustrated in figure 1.

Type A instruction is typified at the elementary level by the West Dover (22)* and Downey (1) elementary schools where Individually Prescribed Instruction (I.P.I.) materials (see document 16K) are employed, and at Britton Acres Elementary School (9) where Project PLAN materials (see document 16K) are being tested. At the secondary level, *Type A* instruction is illustrated by the reading program at Hillsdale High School (30) and the physics program at Harry A. Burke High School (29). In all instances behavioral objectives are clearly specified, and defined systems of materials and methods of instructions have been developed to enable learners to reach specified behaviors. As in all individualized instruction, the pace of instruction is determined by the individual.

Type B instruction is exemplified at the elementary level by Granada Community School (15) and Mary Louise Aiken Elementary School (8). At Granada "contracts" have been abandoned, and while the teacher sets goals with each child, the child himself selects the materials and methods to reach the goal. At Mary Louise Aiken Elementary School, the teachers assess the amount of structure a child needs and establish ob-

*Throughout the report all numbers in parentheses refer to the numbered Case Studies listed in document 16J.

jectives. This may be the only direction some children receive, but other children may receive varying amounts and kinds of guidance. However, the main goal for all students is pupil self-direction. At the secondary level, Type B instruction is typified by Skokie Junior High School (25) where diagnostic exams and "Goal Cards" provide a basic guide to required learning experiences, but a learning laboratory is also employed where students select materials and determine for themselves how they will achieve specified goals.

The Type B instruction programs are characterized by well-developed testing programs, clearly stated curriculum goals, and by well-equipped and -developed learning resource centers or learning laboratories where a wide variety of materials are available. The important point is that the learner has a great deal of latitude in determining how he will learn. The Type B schools believe that each individual's strengths, learning strategies, and learning styles are unique, and that any preconceived sequence or system does the learner an injustice, denying him the freedom to fully develop his individuality by prescribing activities which he should be learning to prescribe for himself.

Type C instruction has been called "Personalized" because the learner identifies personal learning objectives. While Types A and B are most commonly associated with required subjects such as language arts and mathematics, Types C and D instruction are usually found in science, social studies, and elective courses. Individual student interests are the primary factor in selecting objectives, but once selected, the student follows a directed program with specified materials. This type of instruction is typified by a number of secondary schools. Instead of offering the usual world, American history, and American problems courses, Roy High School (33) offers a choice of more than 40 options in the social studies. The student pursues course requirements on an individual basis, but the teacher is always available to provide feedback. Miami Springs High School (31) provides students almost complete freedom of choice in program, except for some required English and mathematics; but even in those subjects the student selects the level of difficulty he desires. Once in a course, Learning Activity Packets (LAPS) are used to direct learning activities. At the elementary level, the L.E. Berger Middle School (23) follows the basic philosophy of providing alternatives and giving the child opportunities to practice decisionmaking and then letting the child see the results of his decisions. Once a child chooses an objective, a learning "contract" is employed. A "spelling contract" or "creative contract" specifies specific objectives of the contract, resources, and instructional procedures. When the child can pass the prescribed evaluation the contract has been fulfilled.

Type D instruction has been called "Independent Study" because the learner independently determines both learning objectives and the means to attain them. While Types A and C instruction were identified primarily with learners of average ability, it was observed that Types B and D were reserved more frequently for above-average learners. For example, at Urbandale High School (28) a total of 33 students out of a total enrollment of 560 designed their own program of studies. At Melbourne

High School (37) the "Inquiry" and "Quest" programs release students either full or part-time to pursue independently anything in which the student is interested and which is not offered in the curriculum. Both programs are designed for students "...who have evidenced active, scholarly interest in the pursuit of knowledge," but the "Quest" program is somewhat more liberal in that "...a creative imagination can substitute for a strong academic background." At the elementary level both Lakeside School in Merrick, Long Island (97), and Kahala School in Honolulu (14) offer exemplary independent study programs. Pupils determine the objectives they desire to pursue and select their own materials from library and learning resource centers.

In describing the four basic types of individualized instructional programs, the author may have given the impression that one school uses one type of program to the exclusion of others. This is not the case. Most schools which have or are making attempts to individualize their programs employ variations of each type. The purpose in describing the various combinations is not to narrow the administrator's concept of the nature of individualized instruction, but rather to broaden it. If the administrator perceives individualized instruction as being oriented toward the individual rather than the group, always involving individual pacing and utilizing a variety of arrangements with reference to objectives and media, his perception is accurate as of 1970. It should be noted that the names *individually diagnosed and prescribed, self-directed, personalized,* and *independent study* have no particular status or consensus. They are merely descriptive terms and afford a convenient way to identify general arrangements. Type A, B, C, and D can be equally useful for communicative purposes. The essential point is that the administrator should not let anyone convince him that there is only one way to individualize instruction. There are too many different yet effective programs to accept such a position.

IPRIP

No. 16B

OBJECTIVES OF INDIVIDUALIZED INSTRUCTION

So much has been written about educational and behavioral objectives that no attempt will be made here to review the importance, uses, or methods of stating and measuring them. What may be important to the school administrator is an awareness of the influence that changes in instructional method have had on educational objectives, and an awareness of how dissatisfaction with traditional educational objectives has influenced the development of procedures to individualize instruction.

It was observed in this study that four major trends or directions for educational objectives were emerging in practice, and each merits the administrator's consideration. One trend is closely associated with traditional skill and subject matter content, but there is an attempt to become more specific and to state objectives in behavioral terms, and to extend the range of skills and subjects.

A second trend mirrors the influence of the "child-centered" approach. It places less emphasis on the acquisition of specific skills and facts and places increased emphasis on optimum individual development. Objectives are more individualized and dependent upon learner needs. Children who have few academic problems are provided more learning experiences related to social, emotional, or physical development. Subject matter is used more as a vehicle to expose needs or provide an opportunity for the teacher to work with a child in an area of concern to the child.

A third trend places less emphasis on subject matter for an entirely different reason. The basic concept is that present knowledge is changing at a rapid rate and new knowledge is being developed so quickly that the only really legitimate objective of the school is to develop independent, lifelong learners. Thus, the emphasis is on the affective domain, i.e., developing a pleasant, positive feeling toward learning, and toward learning how to function as an independent learner.

Finally, there is a trend toward developing a new curriculum with specified skills and subject matter, developing a procedure to continually modify those skills and subjects and the behaviors they represent, and developing a means to keep the skills and subjects relevant in

terms of the context of the society in which those behaviors will be used. Each of these trends will be specified in greater detail with examples of statements which the school administrator may want to review as a starting point for additional development.

Objectives Specifying and Extending Traditional Objectives

At the present time, the largest percentage of schools visited (50 percent) report that their objectives are traditional in terms of skills and subject matter content. However, the underlying theme is that they are tired of giving lip-service to those objectives and year after year seeing children leave the school without attaining them. At the elementary level the trend toward specifying behavioral objectives in traditional skill subjects is well illustrated by schools where Individually Prescribed Instruction (I.P.I.) is used, where Project PLAN materials are being developed, and schools where teachers are designing "contracts" containing specific behavioral objectives. At the secondary level the trend is exemplified by remedial programs in basic skills; by schools where there is an emphasis on academic achievement and college-preparatory programs; and in schools which are extending the concept of clearly stated behavioral objectives to all academic areas.

Schools that aim at traditional objectives and which have specified, in behavioral terms, what they mean have not abandoned concepts identified with individual learner differences. At one school (24):

> *...all students do not have to take all of the contracts that have been prepared in each of the subjects. A slow student may not have to work with Roman numerals because he may have difficulty even in learning Arabic numerals.*

Another school (19) is trying to move individuals rather than groups through a prescribed curriculum:

> *The plan is designed to allow students to move as fast and as far as they can, but it is concerned with moving individuals rather than classes or groups.*

Project PLAN (9) has developed comprehensive lists of objectives for grades 1-12, which reflect current thought and practice with respect to educational objectives in the five areas of reading, language arts, science, mathematics, and social studies. It is intended that each Project PLAN student select his own educational objectives with the help of his teacher. Thus, all students would not take all units, but the units would be selected on the basis of a diagnosis of the students' abilities, interests, and aptitudes. Individually Prescribed Instruction (1,22) is "...based on a carefully sequenced and detailed listing of behaviorally stated instructional objectives." Such listings must be used in planning other aspects of the program and should have the following characteristics:

- Each objective should tell exactly what a pupil should be able to do to exhibit his mastery of the given content and skill. This should typically be something that the average student can master in such a relatively short time as one class period. Objectives should involve such action verbs as *solve, state, explain, list, describe* rather than general terms such as *understand, appreciate, know,* and *comprehend.*

- Objectives should be grouped in meaningful areas of content. For example, in arithmetic the objectives will typically be grouped into such areas as numeration, place value, addition, subtraction. Such grouping aids in the meaningful development of instructional materials and in the diagnosis of pupil achievement. At the same time, this grouping does not preclude the possibility of having objectives that cut across other areas.

- Within each area the objectives should, if possible, be sequenced in such an order that each one will build on those that precede it and, in turn, be a prerequisite to those that follow. The goal is to let the objectives constitute a "scale" of abilities.

- Within the sequence of objectives in each area, the objectives should be grouped into meaningful subsequences or units. Such units can be designated as representing different levels in progress and provide breakpoints so that, when a student finishes a unit in one area, he may either go on to the next unit in that area or may switch to a unit in another area. (For example, upon completing level B Addition the pupil may either go on to Level C Addition or move to Level B Subtraction.)

The levels alluded to above refer to the levels of difficulty as they are sequenced in the instructional system. The A level is the simplest and the I level is the most difficult.

Some secondary schools (37, 38) have very extensive statements of objectives. At Melbourne High School (37), for example, behavioral objectives have been written for each of the four disciplines: mathematics, English, science, and social studies. Each department has prepared objectives at each phase, which means different levels of difficulty for each subject. Thus, there would be behavioral objectives for Phase II, English.

In addition to making traditional objectives more explict and subject to measurement, there is a tendency, when instruction is individualized, to expand the variety of offerings in the curriculum. Two smaller secondary schools (40, 41) report that their objective is to offer a wider range of learning experiences than are available normally in small high schools. At the elementary level several schools retain traditional objectives but seek to expand the range of learning experiences to include new subjects and vocations.

The objective of Parkside Elementary School (10) is to build on the child's interests, to inspire more enthusiasm for learning, and to create "vitality in the program." Activities are chosen by the children and are something in which they have an interest.

At the L. E. Berger Middle School (23) basic skills are stressed, but the underlying philosophy is to provide alternatives and give children the opportunity to practice decisionmaking and to see the

results of their decisions. The ultimate goal is "...to make middle school children (grades 5-8) problem solvers rather than storehouses of information." At NOVA (44), basic skills are one type of objective, but there is a second type which seeks a broad range of learning experiences"... to allow for vocational preparation as well as carefully planned sequences for the college bound."

Some schools, for example Pacoima Elementary School (4) and Granada Community Schools (15), are beginning to extend their traditional objectives into both affective and developmental areas.

Skokie Junior High School (25) operates under what they call a system of goal cards:

> *These goal cards are an area-by-area list of rather specific objectives that we feel children should accomplish as they proceed through our grades. However, a distinction should be made between the larger educational objectives, which are the ends sought in the total process of schooling, and the implementation of these objectives or purposes through a device like the goal record card.*

Some schools are beginning to stress the development of *independent* and *self-directed* learners in addition to traditional skills and subject matter. Parkview Elementary School (5) has in addition to the traditional objectives in skill areas, "...the goal of teaching children to work on their own, to be self-directed learners, to accept responsibility for their own growth." Huron High School (35) is developing specific behavioral objectives, but additionally, they want to teach their students "...responsibility and the ability to adapt to any type of secondary school they happen to attend."

Two schools, East Elementary School (17) and Juliette Low School (13), extended their traditional objectives to include objectives which reflect their basic concern for developing the child's self-concept. The basic or ultimate goal is "self-fulfillment for each child." They want each child to know himself and have respect for what he is and what he may become.

Objectives Employing Optimum Individual Development

A smaller proportion of schools (less than 24 percent) reported that they were placing primary emphasis on the optimum development of each individual, and placing less stress on skills and traditional subject matter content. The trend is most vividly illustrated at John Murray Junior High School (32) where the teachers report that the school is not concerned with attempting to teach facts in the conventional "subject matter" sense.

> *The goal is to try to change the self-image of learners who are average or above average in ability, but who are underachieving. For us, subject matter is used as an excuse to start a relationship between the student and teacher; then we move to an analysis of the student's needs. The whole system is based on Maslows' Hierarachy of Needs. We've come to the conclusion that*

junior high age is not the time to engage in a lot of formal academic learning. Children need this time as a period of readjustment.

It should be noted, however, that the program at John Murray Junior High has three general program objectives:

- Academic growth is evaluated upon the basis of achievement tests.
- Personality and emotional growth is evaluated upon the bases of psychological testing and subjective teacher judgment.
- Physical growth is evaluated upon the bases of the Oregon Motor Fitness test and subjective evaluation by teachers.

At the elementary level several schools emphasize a primary concern for the individual. Such is the case at Martin Luther King Jr. Elementary School (11), G.S. Skiff Elementary School (3), and Wilson Elementary School (18).

The University Elementary School at U.C.L.A. (2) has unique objectives. They are:

...organized into four major phases of learning: early childhood, lower, middle, and upper elementary. While each phase is concerned with the total learning experiences of every child, certain educational objectives have priority. A child's progression from one phase to the next is based on a reasonable accomplishment of those objectives.

Matzke Elementary School's (6) basic philosophy is that the objectives of elementary education must change from teaching content (facts) to teaching children *how* to find facts, solve problems, locate information, and think for themselves. Therefore, their objectives not only provide for individual pacing, but also state that opportunity shall be provided "...for each child to approach learning from a view dictated by his unique interests, abilities, and cognitive styles." Matzke also has stated objectives relating to better utilization of teacher talents, materials for individualizing instruction, media, and inservice education for educators.

Barnsley Elementary School (21) and Lakeside School (7) view the development of each child's potentialities as their ultimate objective.

Two schools emphasized that their primary objective is teaching learners to use their time wisely. Harry A. Burke High School (29), in its Independent Study Program, states: "The use of this independent study time is extremely important; in fact, this is the heart of the program." In advising students how to use unscheduled time for study and research the Student Handbook lists 14 different ways to use unscheduled time.

At Southside School (20) children are encouraged to make and follow their own study schedules. Teachers are instructed to reinforce the desired behavior with praise and "+" marks on the student's plan sheet.

Objectives Emphasizing Lifelong Learning

Nearly 20 percent of the schools visited placed primary emphasis on developing independent, lifelong learners. Objectives of this type focus on the affective domain of learning and, to a lesser extent, on independent study skills. The emphasis is on learning processes and learning. The objective is to build an atmosphere, an attitude, and approach to learning, not a sequenced, structured, predetermined series of learning experiences. While many of these schools do employ contracts and other structured aids in learning, the attitude toward their use is different from schools which are oriented toward student academic achievement. The concern is with the learner's reaction to the learning experience, rather than with what or how much was learned in the experience itself. The assumption is made that the learner will learn what he considers relevant to his requirements. When his requirements change, as they undoubtedly will, it is expected that he will have both the desire and the means to acquire whatever additional learning is relevant to his new requirements.

The school system which best exemplifies this philosophy is Duluth (42), whose superintendent of schools said:

> *We have an end goal that says we want lifelong learners, and this implies that if one is going to be a lifelong learner, one has to have a very active role in his own learning processes. It also implies that learning is not drudgery; rather it should be exciting. So this is the end product we are looking for: an attitude toward learning. What we're saying is that how a subject is taught, and the process of teaching it, is as important as the content itself.*

He went on to explain that he believed the kind of goals which Duluth schools sought could be measured, and that there were noticeable changes in attitudes as children progressed in the program.

The primary objective of Meadow Moor Elementary School (12) is "...to make children independent learners." Skill subjects are taught as means to that end, not as an end in themselves. After basic skills are learned, students are encouraged to pursue and develop their own interests. The school is divided into two areas: primary, for children whose ages range from approximately 8 to 12. The objective of the primary area is to make children literate, and is defined as being able to pursue an idea independently. The objective of the upper area is to develop skills of independence so that children "...can become self-propelled learners, interested and excited in learning, and able to develop the things in which they are interested."

Three other elementary schools in widely spaced sections of the country--Connecticut, Arizona, and Hawaii--expressed comparable objectives. Mary Louise Aiken Elementary School (8) makes it clear that

individualization of instruction is the means to an end and not an end in itself.

Shaw View School (16) shares this opinion and agrees that the most important objective is the process the learner goes through in learning. The child plans his own schedule, establishes his own objectives, and selects his own means to achieve objectives. The teacher's role is to make periodic evaluations of progress toward those objectives, and to help the child only when the child says he needs help.

Kahala School's (14) highly developed independent study program is also designed to have "...children learn to learn, and to enjoy learning."

Four secondary schools list the development of independent, lifelong learners as the ultimate goal of their instructional programs. Southwest High School (27) takes the position that their "...objective is to help learners become highly educable, not highly educated." What is meant by this statement is that they assume that formalized knowledge learned today will be quickly outdated and not particularly relevant to each learner's particular situation at some future date. Therefore, the objective is to help prepare him to be able to continue to learn those behaviors which he is going to need in the future.

At Miami Springs High School (31) the principal stated:

> *We are trying to accomplish three things. First, young people need to develop certain competencies to continue learning through life. Second, we have to unlearn improper attitudes, i.e., eliminate those attitudes which tell young people that the type of formal learning that goes on in shcool is a bad thing, and that learning is something to be avoided rather than something to be prized. Third, we need to develop some degree of social emphasis on individualization because there are idiosyncracies within each of us, and that's fine; but I also think there are commonalities among us and these also must be emphasized. We think an equally important objective is to develop experiences in school to help students learn that they have responsibilities beyond themselves.*

Niskayuna Schools (46) report that their objective is to develop skills and attitudes toward learning, so that when children leave the formal educational environment they will continue to do and learn things they learn in formal educational environments. Their unique approach to this objective was to study how people learn outside of school and then organize their educational system around those kinds of learning methods.

Roy High School (33) has similar objectives, but cautions that independent, self-directed learning is not necessarily learned by exposure to it.

Objectives Emphasizing Increased Relevancy

A smaller proportion of the schools visited placed primary emphasis on teaching specific content, paralleling traditional schools, and only changing that content from traditional to something considered more relevant in terms of the context in which students would use it. Only three schools reflected this concern to identify a new and more relevant body of knowledge as their basic objective.

Urbandale High School (28) expressed the need to make secondary education more relevant to the needs of today's secondary students. Seventy percent of their students go to college. Their objective was to prepare them for the freedom and the choices that they would be offered in college. The remaining students would be confronted with other alternatives. The objective, therefore, was to provide secondary school students with the type of experiences they will need to bridge the gap between high school and college, and between formal education and "real" life.

J. E. Gibson High School (36) expresses comparable objectives. Their aim is to improve the "useful" learning of students, i.e., useful to the student rather than satisfying, "...what is important to teachers, tests, or tradition."

The most massive, concentrated, and determined attempt, however, to identify what the schools should be doing is being led by the school superintendent at Temple City, California (26), who has launched a program aimed at determining whether the schools should be teaching children "to live in our world or theirs." He has engaged consultants and personnel in reviewing the projections of the major "think tanks" in America to try to determine the competencies that will be needed by the school children of today in order to prepare them to live successfully in the world of tommorrow. His findings are too extensive to be summarized here, but if the projections of the "think tanks" are even partially accurate, the curriculum of today has questionable relevancy for tomorrow. The invention of the "pill" was cited as but a single example of an event which will profoundly change existing behaviors. Expected population shifts, political and economic trends, and changing requirements for occupational skills suggest that the curriculum is in need of major overhaul, or something a little more extensive. This superintendent has gone beyond theorizing and has referred both current and projected objectives to board members, parents, and staff to determine their preferences. Perhaps not too surprisingly there is a preference among board and parents for preparing children for the world in which their children will live, but teachers question their desire or competency to teach that which they do not know. This raises a rather pertinent question in the author's mind about the relationship between content and method in individualizing instruction. Are educators developing a 1970 instructional method, or delivery system, to deliver the 1940-60 package of content mastered by today's teachers?

IDIEP

DIAGNOSTIC PROCEDURES

No. 16C

One of the primary objectives of individualized instruction is to change the typical group-paced situation so that each child receives an "appropriate" assignment. An attempt is made to increase motivation by identifying the learner's interests and providing learning experiences compatible with those interests whenever possible. The size and frequency of assignments are dependent upon both the learner's ability and past achievement. Therefore, when individualizing instruction, the teacher has a continuing need for information about each child.

The operations involved in obtaining essential data about each learner, and in analyzing that data, are frequently called *diagnosis*. Many schools claim that they place their greatest emphasis on, or base their entire system on, diagnostic procedures or systems. Some schools report they are not too compulsive about this matter because they do not believe that existing knowledge and procedures are either infallible, reliable, or desirable. The latter group feels that when the teacher or the "system" takes over the function of determining learning experiences for individual children, children are robbed of one of the most vital learning experiences of all.

Regardless of opinion, in actual practice there are three fundamental elements or procedures involved in diagnosing individual learner requirements:

- Special (criterion type) tests, or standardized (normative) tests are employed as the primary source for obtaining data.
- Data are given an objective analysis and interpretation, i.e., a given score(s) has an agreed-upon meaning, and a specified learning experience follows; or data are given a subjective analysis and teachers prescribe a wide range of learning activities using test data as only one consideration (often a minor one) in determining subsequent learning experiences.
- Individual teachers or a team of teachers diagnose the learner's requirements.

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In addition, there is an overriding factor that pervades all diagnosis--*student interests*. In some instances this is the primary basis for determining learning experiences regardless of test scores, their methods of interpretation and analysis, or the number of teachers involved in the act. Obviously, as in any human procedure, the categories used to describe elements or procedures are not totally rigid, and there are variations within and among them. But, the procedures or elements are sufficiently clear and definable to permit classifying schools according to the combination or pattern of elements most frequently employed. In total there were nine observed configuration, each of which is discussed below.

. Special tests objectively interpreted, one teacher
. Special tests, subjectively interpreted, one teacher
. Standardized tests, objectively interpreted, one teacher
. Standardized tests, subjectively interpreted, one teacher
. Combination of test types and interpretive methods
. Special tests, subjectively interpreted, team of teachers
. Standardized tests, subjectively interpreted, team of teachers
. Combination of test types, interpreted by team of teachers -
. Diagnosis on the basis of student interests

Special Tests, Objectively Interpreted, One Teacher

This was the combination most frequently observed. It is exemplifed by Parkview Elementary School (5) where diagnoses are made primarily by student achievement on prescribed tests and tasks. Once achievement in basic skills is identified, the student is placed in an appropriate level in a prescribed sequence. All the materials are organized and ordered so that the child has laid out for him the total course, i.e., all the behaviors to be learned. Emphasis is placed on nongrading. The teacher stays with a given child for 3 years, and gets to know him so well that constant rediagnosis is not required. In elected subjects (science and social science) individualization is determined by student interests from among a wide range of collected materials and suggested activities.

At West Dover Elementary School (22) where Individually Prescribed Instruction (I.P.I.) materials are used, much greater reliance is placed on specially prepared tests. According to one teacher,

> *When we begin placement procedures, we start with Level B, Numeration. This test gives a gross profile of the child's abilities in the mathematics placement areas. He could, for instance, be working at Level B, Numeration, and perhaps, Level C, Addition, or Level D, Subtraction. The child's profile is dependent upon what skills and strengths he has as indicated by the placement tests. We next refine the gross profile by giving the student a mathematics pretest. It specifies a specific skill that we are looking for. The pretest also indicates the individual child's needs. The teacher prescribes individually for each of the students on a*

daily basis and more often if necessary. It is a teacher's duty only to initiate the lesson plan. The student spends 96 percent of his time working independently; and the other 4 percent of the student's time, on the average, is spent getting help.

Teachers at Downey Elementary School (1) also use I.P.I. materials and report similar procedures.

Shaw View School (16) employs what they call Individual Curriculums or I.C.'s. These I.C.'s are teacher-prepared and contain performance measures (called standard tests) in addition to statements of learning objectives and resources. The I.C.'s describe what the student will need to know to pass the test. The test serves as a diagnostic tool for the student after he has completed some work in the area. The student decides when he is ready to take a test, and his performance determines whether he should continue working on a skill or go on to the next I.C.

Prototype materials are being developed at Niskayuna Public Schools (46) to achieve specific objectives for children experiencing difficulties.

Barnsley Elementary School (21) has organized a number of "learning stations" in each instructional area, where diagnosis is made. Each child moves at his own speed and time, and as an individual, from station to station. The kindergarten moves as a team among stations. Then, when they move to the next level, which is mostly first graders, the children start moving as individuals. Each child keeps his own work folder. When a child finishes the work at one station, he puts his work in a folder and moves to another station, but keeps his folder with him. At some point, the teacher reviews the work in the folder with the child, and the two of them decide jointly how well he has done and what his future assignments should be. The stations are organized with materials at various levels of difficulty so children are assigned work appropriate to their abilities.

Several secondary schools also use specific diagnostic procedures to assign students learning experiences. Hillsdale High School (30) uses tests that indicate both grade level and specific skill deficiencies within grade levels in reading and mathematics. Burke High School (29) employs pretesting in some areas.

Southwest High School (27) is now in the process of building UNIPACKS on the basis of concepts. Tests are included to measure attainment of the concept. If the learner has mastered the concept, as determined by his performance on the test, he may skip the unit. Also there is much free choice among concepts to be learned. Therefore, both prior learning and student interests are considered in diagnosing learner needs.

John H. Glenn Junior High School (35) employs a testing center for mathematics, which is manned by an experienced teacher. The teacher grades papers and notes errors and "right then and there prescribes the next package of materials for the student."

Skokie Junior High School (25) uses diagnostic exams in mathematics, language arts, social studies, and science. Each learner has a profile in each subject, but the profile is updated as learning takes place. As the learner goes through each unit and corrects it, the teacher reviews his work and makes a prescription.

Brittan Acres Elementary School (9) was the only school visited which actually used a computer to augment the teacher's diagnostic capabilities. The Project Plan materials, used in the school, provide several alternate routes to achieve the same objective. Five objectives are grouped together in a "module," and in each module there are several Teaching Learning Units or TLU's. When prescribed TLU's have been completed the student takes the module test. Results are entered on cards and sent to the computer. The computer has information stored on each pupil. Each week a status card is filled out to tell the computer how far each child has moved in each subject. Some subjects are sequential, such as mathematics; so the next TLU is automatic. In other subjects, e.g., English, TLU's are not sequential; so the teacher and learner jointly decide assignments and the information is given to the computer. As scores are entered into the computer, the computer, on the basis of all information supplied it, assigns the next TLU and module.

Special Test, Subjectively Interpreted, One Teacher

The schools which employ this format are among the most innovative in the country in terms of changing from conventional procedures. For example, Southside School (20) considers most of the child's behavior a test. Every social situation requires a "responsible" kind of behavior, and each teacher must subjectively evaluate that behavior and reinforce it. A similar task confronts the teacher at Mary Louise Aiken Elementary School (8). However, here the challenge is to assess the amount of structure a child needs. Every assignment is a test. If the learner can structure the details of the objective and the means to achieve it, the teacher allows the child almost complete freedom. If the child's behavior, as subjectively determined by the teacher, suggests that he needs more structure, that diagnosis guides the teacher's behavior.

Lakeside School (7) uses a unique system for determining each child's learning experiences. General topics for extensive research are selected by groups of students. Then each student determines the specific portion of that topic on which he will focus his efforts. The general objectives of all instruction provide an overall guide to the expected outcomes of his efforts. Each child prepares a special report which serves as the test of his contribution to the cooperative

effort. The teacher assesses the quality of each child's work on a subjective basis, and this assessment provides a means for suggesting areas of further development.

Pacoima Elementary School (4) uses traditional and teacher-made materials and tests, but here tradition ends. There is continual teacher diagnosis of all learner behavior. However, instead of prescribing new or unique materials, the teachers assign children to tutors. The tutors help those children learn who did not learn the first time around. The teacher is always a resource person for the tutors, who are other children who have already learned the concept. However, the responsibility for learning is not delegated to the tutor; rather it is considered a dynamic process where the objective is to get everyone--teacher, tutor, and learner--actively involved in the act.

Standardized Tests, Objectively Interpreted, One Teacher

Cashton Elementary School (24) uses the Iowa Test of Basic Skills as the primary instrument to diagnose learner needs. From information provided by the previous grade teacher (program starts at grade 4) and from the results of the Iowa test, the learner is assigned an appropriate contract. From there, progress is determined by performance on each succeeding contract.

Franklin Elementary School (19) also uses the Iowa test, and the information is placed in an accumulative record in the central office. The homeroom teacher, who is responsible for about 50 pupils, assigns most of them to specialty teachers. This leaves the homeroom teacher a relatively small group of children to work with at one time on the skill subjects. The accumulative records enable teachers to diagnose individual learner needs and prescribe appropriate learning tasks.

Standardized Tests, Subjectively Interpreted, One Teacher

Granada Community School (15) uses a wide range of commercial materials for diagnostic purposes. The plan is to make these materials available to children with instructions to start on any materials that they can complete successfully. The Science Research Associates (SRA) materials were found to be useful for this purpose. A record was made of everything that was observed, merely to determine where a child was able to work successfully and where he ought to start. The observation was made that "children make appropriate choices 90 percent of the time." With this information teachers set goals for each child on a subjective basis.

Three secondary schools administered standardized tests to collect data on students for diagnostic purposes, but each school used the information only contingently in assigning students to learning experiences. At Miami Springs High School (31) the notion of *phases* of instruction emerged. Regardless of achievement scores, the student should be allowed to do what he believes he can do. Student judgment

became an important factor in selection of phase or difficulty level. He may go to a more difficult or easier level depending upon how well he performs; but the student is counseled by teachers whenever a change is contemplated.

At Melbourne High School (37), teachers have standardized test data available from a battery of tests. The test data are used with records to provide information to students as to what phase they should logically undertake.

Kauai High School (39), in its remedial reading program, uses the Nelson Reading Tests, but the teacher supplements test data with individual interviews. Goals are set for each learner; however, the program is flexible so that, if a student's interests or general feelings indicate a change of goals is needed, these goal changes can be accommodated. Developing the desire to read, the affective side of learning, is assigned high value in the remedial program.

Combinations of Test Types and Interpretative Methods

While most schools base their diagnostic procedures on one philosophy or another, several schools employ a combination of methods and materials. An excellent example is Meadow Moor Elementary School (12), which employs both teacher-made tests and adopted commercial materials. However, diagnosis takes place after the learner has been assigned an appropriate learning environment. The principal explains his school's approach:

> *We've tried to organize our staff by choosing teachers who have different kinds of personalities. We have one kind of teacher who is very nurturing, another who is quite demanding, and another who is probably a mixture or combination of the two. We feel that the matching of the child and the teacher is more important than age level or anything else. A special form has been devised to assist in diagnosing the child's personality and determining what kind of classroom atmosphere he should have.*

Martin Luther King Jr. Elementary School (11) reports that their system of diagnosis differs for each subject area. Because of the organization of teams there are specialists who work out the procedures. For example, interests form the basis for needs in one area. In another, the curriculum may be rather rigid with little provision for systematic diagnosis. At Matzke Elementary School (6) several factors are considered when a child is being diagnosed for reading and arithmetic: mental age, cumulative records, achievement and aptitude test scores, teacher opinion, and diagnostic tests. In other subjects there is little diagnosis, but pupils work on sequentially prepared materials which fit their "interests, abilities, and cognitive styles."

Nova Public Schools (44) stress the idea that individualization brings a new and personal dimension to the center of concern, knowledge of the learner. The teacher "must know the learner's background, motives,

interests, perspectives, attitudes, hopes, and aspirations or lack of same," and utilize all this information in counseling students. There is no emphasis on a formal system of diagnosis. It is general, and only becomes specific when a specific learner needs help. The basic concept is to provide clear goals, the means to reach them, and personal help whenever needed.

Milton Community School (38) assigns children to appropriate programs "based on past performance, teacher recommendation, achievement test scores, and IQ test scores." The school established programs on *levels* of difficulty. A child is assigned to a level on the bases of available test data and subjective teacher judgment. However, he may be transferred to any other level at any time, depending on his performance. Therefore, in the final analysis, performance on the specially prepared examinations is really the basis for assigning learning experiences.

Special Tests, Subjectively Interpreted, Team of Teachers

Three schools exemplified this arrangement wherein they devised methods or instruments to diagnose pupils' needs; but these procedures were interpreted by a team of teachers who used their collective judgment in prescribing learning activities. East Elementary School (17) reports that, "diagnoses are made by the total staff on tests designed to measure their objectives." However, they also want to know the following:

- In what kind of social setting is the child happiest?
- What kind of leadership ability does he have?
- What are his academic achievements?

The UCLA Laboratory School (2) stresses diagnosing each child "especially in the learning act." Teachers are taught to look for subtle cues. Much attention is given to the "application of learning theory to prescribe for each learner what is best for him. At least 30 variables are at play, but diagnosis is not a single, fixed act such as a test. Rather it is a continuing, personal thing from an alert, informed teacher."

Standardized Tests, Subjectively Interpreted, Team of Teachers

Five schools utilized standardized test data as a prime source of information about students, but data are interpreted subjectively by teams of teachers. John Murray Junior High School (32) administers both standardized achievement and personality tests. Diagnoses are made by teachers in the team who work closely (teaching ratio about 18-1) with students. Field trips and a generally relaxed academic environment are used to break down formal student-teacher relationships. The school year is begun by conducting group activities in general interest subjects such as genealogy, calligraphy and forestry; however, no attempt is made to evaluate achievement. Since the program was originally designed to reach students who have had academic

difficulties, the goal is to reduce fear and academic expectations. The teacher's purpose is to know the individual as a person--his insecurities, interests, psychological needs. Teachers encourage the students to talk about their problems, values, and interests. In final analysis, the learning activity is decided totally by the student's preferences. There is no fixed subject matter in this special program.

Parkside Elementary School (10) tests each child in reading skills (Ginn Series) and mathematics skills. Each child is also interviewed so that his interests may be ascertained. Several teachers have contact with a child. No special forms or rigid system is employed. The teacher looks over the test scores, knows each child, and discusses with him his learning requirements. Knowing what materials are available, he assigns verbally an appropriate task.

Juliette Low Elementary School (13) administers standardized tests, and diagnoses are made by individual teachers and by the team. Teams meet weekly and discuss different children. Social workers and the principal get involved with children who are having serious problems. Whenever a child is not achieving according to his potentialities, a "rediagnosis" is made.

Wilson Elementary School (18) conducts much pretesting before an instructional program is planned for each child. The school employs large nongraded, team teaching units which require a major emphasis on diagnosis. After the child's needs and past learnings have been identified, appropriate groupings, instructional materials, and learning experiences are planned. The child helps set his goals and in the process is taught how to establish realistic goals for himself.

The G. S. Skiff School (3) has an extensive standardized testing program in the spring. Most children in this school have been in Head Start programs; so there is some information available about each when he arrives at the school. The standardized test data, teacher opinion, and general information available on each child are reviewed by the teaching teams in diagnosing a program for each child.

Combination of Test Types, Interpreted by Team of Teachers

The system used in the Duluth, Minnesota (42), schools represents a situation in which both special and standardized tests are used in diagnosis by a team of teachers. Again, the Iowa Test of Basic Skills is used for a "rough sort." When a child is shown to be deficient in, say, division of fractions, a specific contract is provided him. Within the package of materials developed in the contract are test materials which permit further diagnosis and assist in specifying exactly what help the child needs. Also, records are passed along from year to year which trace the development of each child.

Diagnosis on the Basis of Student Interests

At Roy High School (33) guide sheets are prepared which explain course opportunities, but these guide sheets do not exhaust the possibilities. If a student has an idea or special interest, the school's program permits him to pursue it. Also, there is an extensive counseling program which helps him explore alternatives and learn to know his own capabilities. Thus, both diagnosis and prescription are based fundamentally on student interests.

Huron High School (34) uses a similar approach. There is no systematic diagnosis of each child, but the plan is to offer a much wider range of choices than before, and to inform the students of all opportunities. This increased range of choice is combined with a scheduling procedure which enables students to enroll in more courses (up to 10) or fewer if he isn't interested or can't handle them. Again, an expanded counseling service is provided to help students select appropriate schedules.

Urbandale High School (28) offers a choice of 88 different courses, plus one day each week called a Quest Day to pursue individual interests. Experience has demonstrated that only 4 percent of the students attempt to take advantage of the freedom offered them. There is a special program for these people. Thus, student interests and maturity (defined as the ability to handle freedom) are the primary criteria on which diagnosis is based.

Haxtun High School (41) provides living proof that a small high school can provide opportunities comparable to a large one. The central focus of diagnosis is the student's aptitudes and interests. The primary objective is to help him in career selection. Many materials have been collected, and the staff has been oriented to helping the student in defining his career goals. Courses of interest which are not normally available in a small high school are provided through individualized instruction. J. E. Gibson High School (36) implements comparable procedures, but there is increased emphasis on using community resources. The student's vocational interests are explored through a strong work-experience program supported by the community.

The science program at DeKalb County Schools (45) provides students an almost unlimited opportunity to explore and develop their interests in science. The Fernbank Science Center contains the kind of rich environment that not only informs but also inspires.

At the elementary level, many schools permit and encourage children to develop their interest, but only one school visited had developed a program comparable to the secondary school programs. Kahala Elementary School's (14) Independent Study Program uses pupil interests as the basis for diagnosing and finally determing the nature of the learning experience.

Conclusion

As one reflects on the many procedures used to analyze and finally determine what are considered to be appropriate learning experiences for each child, the question inevitably arises, which procedure is most effective? Even if the question can only be pursued in the context of the objectives of each school, it is still a significant one. The impression of the author is that, eventually, diagnostic procedures will be differentiated more by learner characteristics and less by other factors. This means that high ability, motivated students are likely to experience a diagnostic procedure quite different from low ability students with few developed interests. As more schools move to larger learning spaces, with independent study facilities, the concept of the team or differentiated staff will increase. This will eventually mean more cooperative and continuing diagnoses. The present concept of the predetermined or objective analysis of the learner's behavior requires much further development, even in basic skills, to satisfy the requirements of most teachers. Their present reaction is that it works for some students, but it is inappropriate for others. Thus, the conclusion is that, in time, diagnostic procedures will be differentiated more by learner characteristics which are still to be specified.

IDIEP

INSTRUCTIONAL PROCEDURES

No. 16D

Two underlying conditions must be kept in mind when reviewing procedures used to individualize instruction. First, in any given school, individualized instruction is often not provided for all students, and, second, individualized instruction does not apply to all subjects.

In many programs only those students with special academic aptitude, special problems, or special interests are afforded the opportunity to participate in individualized programs. Thus, it must be borne in mind that the existence of an individualized instructional program does not necessarily mean that all students are eligible for it, or that all participate in it.

The second point is that, even when a school claims to individualize its program, it does not do so in all subjects. The most obvious examples are some physical education programs, group singing, speech, band, and other activities which, by their very nature, are grouped activities. Also, many school systems make no attempt to force teachers who are not interested or qualified to individualize instruction or to participate in such programs. Thus, in a given school with an individualized program, some subjects may not be individualized. Even within a given subject area, or grade level, some children may be in an individualized program while others will be taught in a group mode. Therefore, it must be kept in mind that all of the examples and statements which follow do not necessarily apply to all students, teachers, or subjects.

Three major components were observed which characterized all of the procedures used in individualizing instruction: (1) the way learning activities were prescribed, (2) the nature of the setting in which these activities took place, and (3) the way time was scheduled in the various learning settings. These three major components are utilized in all possible combinations and result in very different instructional configurations. The dimensions of each major component may be summarized as follows.

Prescription of Learning Activities

Learning activites may be directed or prescribed in detailed ways, or they may be guided by rather nonspecific directions from teachers.

Direction or prescription may be accomplished by teachers, but more often is managed by carefully sequenced and prepared materials which direct learners in very precise ways as to what their learning activities should be. The other dimension of this component is that the student may use his own discretion in selecting the materials and the activities in which he will engage. In these latter situations, the point of view of the teachers is that one of the most significant learnings that children can have is the opportunity to learn to identify the materials necessary for them to learn on their own and to free them from dependence on carefully sequenced and guided instruction. These teachers believe that to produce a self-directed and continuing learner, even when no specific directions or sequenced materials are available, is the most significant learning outcome that the school can produce. There is no reason why both philosophies cannot be continued in a single school, unless, of course, one point of view gains dominance.

Instructional Setting

The instructional setting, i.e., learning space, may be a typical classroom designed for a single discipline with a selection of materials for that discipline and usually staffed by a single teacher. The instructional space may be a multiple discipline learning resource area, typically larger than a single classroom, and usually staffed by more than a single teacher, frequently a team of teachers, and sometimes a teacher, or teachers, with aides, student teachers, and various kinds of support personnel.

Time Schedule

Time spent in the learning area may be scheduled for the individual and/or the subject he is studying; or the student may have a large block of time. He may schedule several activities within this time-block, without reference to any schedule other than that which he chooses to follow.

Among the schools visited, 24 relied primarily on single learning areas, 22 had organized large, multidiscipline learning areas, and most elementary schools visited in the study had changed to multiple learning areas and team teaching procedures.

The following combinations of the basic components are being used in the schools which were studied:

- Activities directed, multiple learning area, time scheduled
- Activities directed, multiple learning area, time unscheduled
- Activities directed, single learning area, time scheduled
- Activities directed, single learning area, time unscheduled

- Activities selected, multiple learning area, time scheduled
- Activities selected, multiple learning area, time unscheduled
- Activities selected, single learning area, time scheduled
- Activities selected, singled learning area, time unscheduled

Specific examples of the instructional procedures for each combination follow.

Activities Directed, Multiple Learning Area, Time Scheduled

In general, this situation is characterized by a rich learning environment with considerable guidance and direction provided by the teacher and/or highly developed materials. At East Elementary School (17) learning experiences are assigned primarily by teachers on the basis of demonstrated performance on the part of the learner. Teachers assign a learning activity on an individual basis for each child. Groups of children are organized to narrow the range of material a teacher needs at any one time; however, within the group, each child may be working on a different task. The schedule is employed to rotate groups through common facilities, and there is a scheduled recess period. No bells are used, except for outdoors and for starting in the morning and the afternoon, but a schedule is followed. Although the schedule is fixed, the children have access to a wide range of materials, teachers freely trade their time to use various facilities, and children are readily moved from one group to another.

Other schools using this combination are Meadow Moor Elementary School (12), G. S. Skiff Elementary School (3), and the West Dover Elementary School (22).

Activities Directed, Multiple Learning Area, Time Unscheduled

A more frequently encountered situation is one in which the activities are directed, but the learner's time in the large learning area is essentially unscheduled. That is, he does not spend 20 or 40 minutes in the multiple learning area, but it is available to him for extended periods of time in which he can schedule his activities as he chooses. In Parkview Elementary School (5) all materials in the basic skills are organized and ordered so that the child has the total course laid out for him, i.e., all of the behaviors to be learned are identified. Students assign themselves the sequence and the rate at which they will work through the prescribed course. In elected subjects, such as science and social science, activities are primarily by student interest and are selected from among a wide range. The student knows the system and avails himself of any of

the materials on which he wants to work. If something he wants is not available, there are plenty of other activities; so he busies himself in another topic and returns later to use the materials he wants. Students have been taught to return materials to their proper place. The school is organized on a nongraded, team teaching plan, in which large "pods" of 90-120 students have a team of three or four teachers. There are no bells or schedules. The teams are balanced with experts in all areas. Students stay in a pod, i.e., with a group of teachers, for 3 years. Primary grades are in one pod, and the intermediate grades in another. Students work with different teachers in different subjects, and sometimes the students have to wait in line for the opportunity to discuss a given problem, but no rigid schedule is followed.

The L. E. Berger Middle School (23) has a plan with a unique feature. Learning activities are carefully sequenced and directed through learning contracts which specify objectives, resources, and instructional procedures. A large multidiscipline learning resource center is located in the center of the school with the rooms radiating from it. The unique feature is that, while the teacher makes the diagnosis and prescription, and the student makes his choices in prescriptions among various subjects, a single person, the director of the learning resource center, fills all prescriptions for the total school (740 children).

Wilson Elementary School (18) employs a counseling approach to direct learning activities. Each child has a specific assignment, but there are also conferences among groups of children having like problems. Group therapy, led by teachers and participated in by a number of children, is about the only infringement on students' time. All children have a series of appointments or conferences. When not in a conference, children are free to work independently, using the learning center and all materials available.

Brittan Acres Elementary School (9) utilizes the materials from Project PLAN, developed by the American Institute for Research, Palo Alto, California. Here learning activities are grouped together in modules which contain approximately five behavioral objectives. A module takes approximately 2 to 3 weeks to complete, and a given objective in a module may take 2 to 3 hours to achieve. In each module there are several Teaching Learning Units called TLU's which consist of a four-page guide which lists objectives, materials, and several alternative routes to achieve stated objectives. When all TLU's in a module have been completed, the student takes a module test. Results are entered on cards and fed into a computer. The computer has information stored about each pupil including past test scores. Each week a status card is filled out to tell the computer how far each child has moved on each subject. In some subjects, e.g., mathematics, the material is sequenced, so the next TLU is automatic. In other disciplines, e.g., English, material is not sequenced; so the teacher and the learner together decide the next desired activity, and again, information is given to the computer. With all information available to it, the computer prescribes individual learning activities for every pupil in the school.

From this general prescription the student utilizes his time and the resources which are available in the multidiscipline areas.

Other schools which use a similar approach are the UCLA Laboratory School (2), the Matzke Elementary School (6), Barnsley Elementary School (21), and the Niskayuna Public Schools (46).

Activities Directed, Single Learning Area, Time Scheduled

This is the most prevelant arrangement among the secondary schools visited. The general arrangement is characterized by traditionally scheduled classrooms. However, learning activities are individualized through various techniques and procedures. For example, Hillsdale High School (30) has organized a special individualized remedial program in reading and mathematics. Instruction is guided through Master Program Guides which contain reference material, the number and designation of an assignment, and various program sheets and enclosures which direct learning activities. Time in the single discipline facilities is scheduled. The school operates on a traditional, rigid, 56-minute class period, six periods daily, 5 days per week schedule. However, a unique computer programing system is employed which schedules each of 40 students, with different programs, to individual learning carrels each period. Every student is diagnosed individually; and from information supplied to a computer, it prescribes individual assignments for each student on a continuing basis. In the mathematics area, activities are prescribed by a teacher on the basis of test data on each individual.

Skokie Junior High School (25) directs learning activities through "goal cards," which are a basic guide to required learning experiences. There are many ancillary units available to expand required learning when interests or other factors dictate.

Southwest High School (27) utilizes UNIPACKS which are organized on the basis of completing preceding UNIPACKS. There is a choice among learning activities within each unit. Remedial sessions for large groups are scheduled, and students have a choice of attending or not. The Stanford Program of Modular Scheduling is employed. Once a student is assigned to a learning area, the UNIPACKS prescribe learning experiences. There are five learning resource centers to supply the materials identified in the UNIPACK units.

Haxtun High School (41) employs a system in which students register for traditional courses, and there is a traditional schedule of classes. However, within classes, contracts are employed. Many of these contracts are designed for individual students on a blank form developed for that purpose. Students are provided opportunities to explore their career interests. Teachers control the learning resources; however, everything that is available may be used by any student at any time.

Other schools involved in this configuration include the Burke High School (29), the John H. Glenn Junior High School (35), and the Milton Junior High School (38).

While the single learning area, with scheduled time and prescribed learning activities, was found most frequently among secondary schools, four elementary schools were visited which employed a similar configuration. Cashton Elementary School (24) had an effective program which involved prescribed learning activities, traditional classrooms, and a fixed schedule for rotating students among classrooms. However, the activities which were prescribed in each room differed markedly from those in a traditional elementary school in that teachers made contracts on "after-school" time, i.e., evenings, week ends, and during the summer.

The Pacoima Elementary School (40) has traditional room and grade assignments, but is permitting much exchange of pupils among rooms. Objectives for each grade have been established. The innovation is that groups and individuals are separated out to work with pupil tutors. The plan is still in its developmental stage, but the basic concept is to have a tutor available for every child at any time they want or need one.

The Nova Public Schools (44) utilize a prescribed sequence of learning activities in what are called Learning Activity Packages (LAPS). Learning areas and teachers are scheduled on 30-minute modules; but the plan is to move back to a block schedule, with a seven-period day. Single subjects will be scheduled first, and then the higher enrollment subjects--e.g., English, history, mathematics, and science--will he scheduled around the infrequently offered courses in order to avoid conflicts. Although time and learning areas are scheduled, the student's activities are prescribed through LAPS materials. The student has many opportunities to choose the rate, sequence, and media that he will utilize in learning.

Activities Directed, Single Learning Area, Time Unscheduled

Only two secondary schools employed a configuration in which learning activities were directed in a single learning area while the learner's time was not scheduled. The first was J. E. Gibson High School (36) where students enroll in only one course at a time. That course is taken for 9 weeks, and a block of time from 40 to 60 hours a day is devoted to the single subject. Learning activities are prescribed for each individual in a conventional classroom situation. The student schedules his time as he desires within the block. The school also has a community-based vocational program which frees a large block of time for students to engage in a work-experience program.

Miami Springs High School (31) also has a program in which the diagnosis of learning aptitudes and interests places the student

in an appropriate *phase* of the program. A phase is defined primarily in terms of level of difficulty. The student is counseled into the appropriate difficulty level, which has been called a phase because there is nothing permanent about it. He can be reassigned to a more difficult or easier level through demonstrated performance. Once in a course, at a prescribed level, instruction is directed through a learning activity packet. Instruction is self-paced. There is a master schedule for rooms, subjects, and teachers. The student has freedom to spend as much time on a subject as he needs and to determine the level of difficulty at which he wants to work. While there is no modular or flexible scheduling, the student basically controls his own schedule.

This same general configuration was employed at the Parkside Elementary School (10). Teachers and rooms are assigned in the traditional manner. Learning activities are prescribed verbally by each teacher to each child. The teacher knows both the learning requirements of each child and what materials are available. Commercially prepared materials are used, and all materials are available to learners at all times. The child works on assigned materials and tasks with little supervision. His time is unscheduled. In a given room, all of the children may be working on entirely different activities. While groups are relatively homogeneous, assignment of students in ungraded areas is flexibly scheduled. Any child may be moved to any group where help is being given in the skill he needs. The child's needs are the key factor in determining where he is placed, not the rigid requirements of teacher or room location.

Activities Selected, Multiple Learning Area, Time Scheduled

Instructional procedures are modified when students have an opportunity to identify or select their own learning activities. In some situations large, multiple discipline learning areas are available to learners only on a restricted schedule. This arrangement has both advantages and disadvantages, but it does provide for efficient use of limited resources. Duluth Public Schools (42) provide for student selection of learning activities. The emphasis in this program is to involve the learners in the instructional process by having each child at the beginning of each day map out how he plans to spend that day. So that the child does not spend an entire day making out a plan, each day's plan is checked and progress is monitored by a teacher. However, it is the learner who decides what contract he will work on. If desired materials are unavailable, some alternative will be worked out and approved by his teacher. A variety of materials are available in the large learning areas. The student follows the time schedule which he establishes.

At Martin Luther King Jr. Elementary School (11) students start activities in a group situation, but as soon as they complete the basic objectives they move into what are called "Mini-Labs" to work on projects of their own choice.

At Kahala Elementary School (14) a special program has been established in the library area where children work in independent study.

Originally, the program was designed as an enrichment program for children of high ability. The program has expanded, however, so that it is now a kind of "release" activity available to all children regardless of ability. Learning activities are based upon student interests.

The Punahou School (43) employs a similar system: traditional scheduling in the high school, a six-period day, and traditional assignment to rooms at the elementary school level. However, there is a very extensive library and audiovisual center with television, dial access system, and an abundance of learning materials. Individualization is accomplished through projects in which these facilities are made available at all hours of the day. The curriculum is planned by individual departments, and each department individualizes instruction in its own way. Student interests are a primary basis for identifying specific projects, but general time and space configurations are similar to traditional schools in which group instruction is conducted.

Activities Selected, Multiple Learning Area, Time Unscheduled

This arrangement provides almost the maximum in student freedom of choice. Not only does the student have a great deal to say about the kind of learning activities in which he will be involved and type of schedule he will use, but he also has available a rich learning resource center which contains almost all of the curriculum materials of the school.

The Granada Community School (15) exemplifies this individualization procedure or configuration. While it may appear that there is little order, children are assigned to a teacher; but that teacher may release children to any other teacher. The teacher's first role is to get all children to start to work on anything that really interests them. In order to find out as much as possible about the child, the available teachers observe and record, within their capabilities, everything the child does. In order to discover the needs of the individual, each child is given a great deal of freedom, including working with puzzles, games, or anything that is of interest to him.

Teachers occupy a kind of home station and serve as a counselor responsible for guiding the total learning program, especially in the basic skills. However, it is the student who exercises most of the decisions. There is an open learning area in each of the very modern buildings where many kinds of learning activities go on simultaneously. Children go where they want to go, within limits, after notifying the teacher of what they are doing. There is much self-instruction and little administration or organization in each building. Teachers work as a team and children, once their objectives are identified, work largely under their own direction to achieve those goals.

The program at Juliette Low Elementary School (13) has considerably more structure than Granada Community School, but the end result is essentially the same. Their procedure is that children are scheduled in a class where assigned learning experiences are initiated. However, when the basic concept has been mastered, children are released to go to a *learning center* where additional followup activities are selected.

Other schools which use this combination are the Shaw View Elementary School (16), Southside Elementary School (20), and Mary Louise Aiken Elementary School (8).

One of the most unique applications of this configuration is found at the John Murray Junior High School (32). This program was originally designed for students who were achieving considerably below expected levels of performance and for whom the regular program had failed. It was discovered, though, that the program needed not only underachievers but also children of all achievement levels to make it work and be acceptable. The school year started with group activities in subjects and activities that were thought to be of general interest. No attempt was made to evaluate achievement. The goal was to reduce fear and academic expectations so teachers could get to know each individual as a person. There is no fixed subject matter content. A block of time is provided for the program, and the student uses it as he sees fit. Many different kinds of materials are available in the learning areas, including games and a variety of audiovisual media. The teacher's main responsibility is to acquire materials desired by students and to maintain the learning areas.

While the experience has been rather traumatic for teachers, the results have been surprising. Several students rated as underachievers were found to be functioning at appropriate grade levels at the end of one year. The dire predictions of the traditionalists were unconfirmed. While students were freed from usual constraints, their new-found identity with teachers created an entirely different learning atmosphere.

Activities Selected, Single Learning Area, Time Scheduled

This arrangement was found to have the second highest frequency at the secondary level. Two elementary schools also found it appropriate. It may be popular at the secondary level because few changes are required in the traditional program. This arrangement can be implemented by increasing available resources and by providing opportunities for a greater student role in determining the nature of their learning activities. The primary procedure for implementing this configuration is the establishment of a learning resource center.

Grand View High School (40) typifies this approach. Students follow traditional hourly schedules and are assigned to regular

classrooms. However, the learning resource center is available at all times, and students use all facilities of the school in completing individual projects. Teachers are familiar with the resources in their subject matter area, and when a student selects a given topic, the teacher alerts the students to the materials available on the topic. The details of pursuing the subject are not teacher-directed, and instruction is individualized.

Roy High School (33) uses a modular schedule, and students may take as many courses as they can schedule per week. Some students take it easy, but some enroll in college courses. Within a course a student has a wide range of activities open to him.

Huron High School (34), Urbandale High School (28), Temple City Public Schools (26), and Melbourne High School (37) also use a similar approach.

Two elementary schools have adopted this general configuration. Lakeside School (7) has self-contained classrooms and children are assigned to a room. The teacher conducts mathematics and reading skills and other subjects on a schedule. However, the teacher has complete choice as to what the class schedule should be. This program differs from a conventional program in that, with the exception of the basic skills, all of the other subjects are taught in a multidiscipline manner in which students study one major issue at a time. This forms the curriculum for the entire class. Within that major issue children themselves select specific topics on which they want to work. Each child identifies individual materials needed to research his selected topic. The child is allowed to go the library at any time that he is working on this common activity. It is a very feasible and simple notion, but is ideally suited to the high ability students in the school.

Kauai High School (39) follows a similar pattern in their reading instruction. Reading is taken on schedule like any other subject; however, many students are deficient in English. There is a fixed daily schedule and a single classroom situation. In this program individuals have a primary voice in establishing their reading goals, and there is a flexibility in the program so that, if a child's interests or general feelings call for a change, the child may implement that change. Students self-administer instructional materials, and there is a great reliance upon various kinds of instructional media which enables each child to proceed as he desires.

Activities Selected, Single Learning Area, Time Unscheduled

This configuration was the most infrequently encountered. Yet, when there was a large, multiple learning area available, the other components were observed together frequently. It may be that the single learning area is not conducive, at the present time, to supporting

an arrangement whereby students determine both their learning activities and the way they should employ their time. The schools which did implement the arrangement were innovative.

At Franklin Elementary School (19), children are assigned to a room and a teacher, but the schedule is abandoned after the first day. The homeroom teachers have the responsibility for the development of each individual and have many resources to assist in the process. The school has developed a very complete learning resource center, and the philosophy is that the staff will help in any way by cooperating to make sure that each child has the kind of experience that he desires. The homeroom teacher serves as counselor and guide. The child may spend some of his time in a small group, or at the resource center with media, or with a specialty teacher. In any event, he does have choices and he uses his time in the best way possible to accomplish the objectives which he and his teacher have identified.

A similar procedure is implemented in the DeKalb County Schools (45) where the Fernbank Science Center is used. In a way, it is comparable to the learning resource center at Franklin Elementary School. After an appropriate orientation, children pursue activities on a schedule which is appropriate to the task they have undertaken as a result of their individual interests. The traditional classroom is common in their regular school situation.

IPRIP

EVALUATIVE PROCEDURES

No. 16E

The general impression one has after studying existing programs is that first priority has been given to developing instructional procedures which do something more than give lip-service to the facts of individual differences among learner. Second priority has been given to rethinking and developing the objectives of the school. Increased attention has been given to improving diagnostic procedures, but these activities need much additional work if they are to relate more effectively to objectives and instructional procedures. Least attention has been given to evaluative procedures, and in many instances the relationship between stated-objectives and evaluative procedures is tenuous or nonexisting.

A distinction must be made between evaluative procedures used to assess specific behavioral objectives (relatively short term) and the ultimate, long-term, overall objectives of the school. This document is devoted to a review of the procedures used to evaluate specific objectives, because at the present time only a few standardized tests are being used to evaluate overall program effects. The evaluative instruments most frequently named were the Metropolitan or Stanford Achievement Tests and the Iowa Test of Basic Skills. However, in most instances these instruments were not directly related to stated objectives and appeared to be administered more as a comparative check on general academic growth than either a diagnostic procedure or as a means to evaluate the achievement of overall program objectives.

Specific objectives directly related to learner activities were evaluated in four general ways. Most frequently used were teacher-made and teacher-administered tests. An interesting development in individualized instruction is the increasing frequency with which teacher-made tests are being administered by paraprofessionals and students themselves. Formal evaluation devices developed by publishers to accompany their materials, and to be used as an integral part of instruction, are being used with increasing frequency as they become available. For many objectives and programs the basic evaluation procedure is subjective teacher judgment. Finally, a few schools are deemphasizing formal teacher evaluation and are placing primary emphasis upon learner self-evaluation, personality tests,

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attitude scales, and other nonacademic measures of changes in learners.

The following evaluative measures are discussed below:

. Teacher-made and-administered tests
. Formal tests accompanying published materials
. Subjective teacher judgment
. Student self-evaluation

Teacher-Made and -Administered Tests

Examples of teacher-made and -administered tests at the elementary level were noted in more than half of the elementary schools visited. Parkview Elementary School (5) has delegated evaluative procedures to each teaching team. Some of these teams accept a student's self-evaluation for preliminary ratings. Others check student progress without specific feedback, using just total scores, and students must identify their own deficiencies. In other instances teachers do the scoring but give specific feedback of deficiencies to each child. In all instances, evaluation is continuous and related to specific behaviors.

The Granada Community School (15) has developed an extensive evaluation plan in which testing is organized by learner and subject, and teachers list and keep records of the goals and achievement of each child.

The Juliette Low Elementary School (13) utilizes teacher-made tests, and teachers are required to evaluate each child on every learning task. With the learning center system, it is an easy matter to release those children to the learning center who have been successful in demonstrating that they have learned. Those who have not successfully demonstrated an acceptable level of performance are given additional teacher help. Each child is released to the learning center as he demonstrates competence. The children's work in the learning center is also evaluated on an individual basis largely by teacher subjective judgment. The Martin Luther King Jr. Elementary School (11) also relies upon teacher-made tests, only in this instance, as children demonstrate competency in a skill, they move to a Mini-Lab for further study, enrichment, practice, or application of the basic skill which has been learned.

Cashton Elementary School (24) employs contracts in which evaluation procedures are developed by teachers as part of the content. When satisfactory competence has been demonstrated, the child is noted as being ready for the next contract. The system for administration of tests is somewhat different in that the learner knows where the tests are; so the teacher is only responsible for approving the taking of a test and then correcting it. The learner knows that he cannot proceed to the next contract until a test has been checked

and approved. The child's record is private, i.e., it is not posted, as in many elementary schools.

At Franklin Elementary School (19) evaluation is accomplished by teacher-made tests in traditional skill subjects; however, testing procedures are also relied upon for diagnosis by all supporting teachers, so the information is recorded in the principal's office. There an abundance of information is coordinated to assess pupil growth.

At G. S. Skiff Elementary School (3) each teaching team develops and keeps its own evaluative and record system. A central office keeps achievement and other test data records. However, little reliance is placed on standard achievement tests.

Pacoima Elementary School (4) utilizes teacher-made tests, standardized tests, and subjective evaluation by teachers; but there is increasing emphasis and concern on evaluating effect, i.e., encouraging the child to work toward the objectives of the school.

At Shaw View Elementary School (16) tests are a part of the instructional contract. Both the contracts and the evaluation instruments have been developed by teachers. This relates evaluative procedures more closely with instructional objectives. Further, students establish their goals cooperatively with teachers, and evaluation is based on the attainment of the individual goals which have been established for each student. Thus, contracts and tests are used selectively. Matzke Elementary School (6) uses a similar plan. The evaluation of an individual's work on a unit is incorporated in prepared unit tests. Yet, each learner is evaluated individually by the teacher.

At the Niskayuna Public School (46) traditional teacher-made tests are currently being employed, but the staff is developing self-contained testing units which will become a part of the self-directed teaching units, which are also being developed by teachers. Thus, a plan has been initiated to relate testing more directly with instructional objectives.

Most secondary schools employ teacher-made and -administered tests as the basic procedure for evaluation. However, in some schools some adaptations have been made. In Skokie Junior High School (25) evaluation of learner achievement is fairly typical and traditional, the real difference being that evaluation by learners is as important as evaluation of learners. The objective is to find out if children are enjoying the program, and if they are not, something is wrong. The intent is to modify the program so that the learner may want to do mathematics as well as be able to do it.

At Haxtun High School (41) evaluation is by traditional teacher-made tests. However, many students are widely distributed in work study and vocational programs, and there is little emphasis on comparative achievement in these programs. The school has expanded their program, and there is an increasing emphasis on subjective teacher evaluation and less on formal testing.

At John H. Glenn Junior High School (35) tests in a given discipline are given by an experienced teacher in a testing center. The evaluation is conducted by a specialist. The results of the evaluation are employed to prescribe the next learning experience, and are used diagnostically rather than comparatively.

At both Miami Springs High School (31) and the Melbourne High School (37) teacher-made tests and subjective teacher ratings are used for evaluative purposes. Tests are an integral part of the prepared Learning Activity Packages (LAPS), but teachers rate individual projects and activities subjectively.

At some secondary schools, student administration of teacher-made tests is the practice. A sophisticated program in physics has been developed at Harry A. Burke High School (29), and the self-instructional packages of materials contain self-administered tests. Students determine when they are ready to evaluate their competency on a given objective. In the Nova Public Schools (44) evaluation is done by students themselves as they work through the Learning Activity Packages (LAPS). When the student has satisfied himself that he can demonstrate attainment of objectives, the teacher administers a final criterion test and a grade is given.

At the Milton Junior High School (38) strong emphasis is placed upon evaluation; and diagnostic, acquisition, and retention tests are administered. If long-term performance drops below the 85 percent level, the learner is recycled back to the original instructional units.

At Meadow Moor Elementary School (12) teacher-made tests are administered daily. They are scored by aides, parents, and other nonteacher help. The information is fed back daily to students and teachers.

At L. E. Berger Middle School (23) the evaluation of learner achievement is the learner's performance on materials in teacher-prepared contracts. However, teachers do not correct the papers, this being done by paraprofessionals. The old argument about the necessity of the teacher correcting the student's paper in order to find out what he is doing wrong has been discarded. In this school, it is

considered more important that the teacher's time be used only for those things which others cannot do for a child. There is constant, daily evaluation and feedback to teachers.

In the Duluth Public Schools (42) students correct much of their own work. A few teacher aides and paraprofessionals also correct papers, and they will play a larger role in this task in the future. However, emphasis is on the total evaluation of the learner, especially at the secondary level. Teachers discuss each student and determine what troubles he is encountering; there is also an exchange of information about a given student in all discipline areas. The objective is that the testing procedures reflect the ultimate objective of the school, which is lifelong learning.

At Wilson Elementary School (18) group screening tests are administered by teachers as a preliminary activity to enable teachers to know pupils and their capabilities more intimately. After the initial acquaintance testing, additional tests are individually administered, usually by a teacher aide because, again, the teacher's time is considered too important to do a task which someone else could do. Students grade papers. In spelling, a buddy system is employed and students correct each other's work. After scoring has been completed, an instructional aide tabulates errors and feeds back the information to teachers. Tabulation of errors by type is done in order to group children for remedial work.

Formal Tests Accompanying Published Materials

Parkside Elementary School (10) utilizes the skills tests that accompany the published reading and mathematics materials which they use in instruction. In other subjects, learner achievement is evaluated by teacher-made tests and subjectively evaluated. However, in all instances, evaluation is used more for diagnosis of learner needs than for comparative purposes. Projects in science and social science are individually evaluated to encourage further student development.

The Brittan Acres Elementary School (9) uses Project PLAN materials developed by the American Institute for Research, Palo Alto, California. The Project PLAN materials include tests for each module of instruction. Scores are entered into a computer, and as information is accumulated it is used to assign the next appropriate instructional unit to each learner. Both West Dover Elementary School (22) and Downey Elementary School (1) utilize the Individually Prescribed Materials (I.P.I.), which require student response to provide constant feedback and information on student progress.

Temple City Public Schools (26) have a collection of materials with tests and other student response materials in each of the major subject matter areas. Teacher-made tests are also employed.

Kauai High School (39) has collected a battery of reading tests in connection with its reading program. The Nelson Reading Test is used as a basic diagnostic tool. Several commercially prepared tests are also administered in addition to teacher-made tests.

Subjective Teacher Judgment

Many elementary schools are reducing their emphasis on objective tests and, instead, placing increased emphasis on teacher interpretation of student achievement. East Elementary School (17) evaluates specific behaviors by using tests produced by the staff, but there are no formal tests for overall academic achievement and no grades. Primary emphasis is placed on the subjective evaluation of a child's development of positive self-concept.

The science program in the DeKalb County Schools (45) utilizes the Fernbank Science Center and thus the program does not lend itself to formal academic testing. Each student undertakes research in special projects in science, which require individual evaluation by the teacher supervising the project.

At Southside Elementary School (20) the nature of the instructional system and its objectives dictate that student behavior be evaluated not for the records, but rather to afford teachers the opportunity to provide reinforcement. It should be remembered that this program is designed for children from impoverished backgrounds, and desired behaviors are reinforced with praise and plus marks on a plan sheet. Here again is a situation in which teacher judgment is the primary basis for evaluation of learner behavior.

Barnsley Elementary School (21) utilizes an evaluation system which involves both the teacher and the pupil. When a child reaches a given level of performance, he is subjectively evaluated by the teacher. The student may advance to the next level at any time. This applies not only to individual subjects, but also to advancement into what would be the equivalent of the next grade in a graded school, where advancement occurs normally at the end of the year.

Lakeside Elementary School (7) involves the entire class in the multidiscipline study of one topic at a time. Since each child selects individual materials and pursues an individual research topic, it is not feasible to employ anything other than teacher subjective judgment to determine both the contribution made by the individual and the rating of the contribution when weighed by a child's ability. However, subjective judgment is augmented in skill subjects by various tests to determine whether pupils have the necessary proficiency in those skills. The Stanford Achievement Test is also administered at the beginning and at the end of the year.

Urbandale High School (28) employs a variety of systems. Independent study projects are evaluated by teacher and student committees.

The pass-fail option is employed for additional electives. There are many nongraded activities in the optional Quest seminars. There is also a tendency to deemphasize grades, the emphasis being on learning without reference to formal evaluation. There is no academic honor roll.

Student Self-Evaluation

One elementary and one secondary school reported primary reliance on student self-evaluation. The Mary Louise Aiken Elementary School (8) employs an instructional system which requires the child to set the goals and evaluate the achievement of those goals. Teachers help to determine if the expectations are realistic for each child, but it is the child who determines whether or not he is satisfied with the performance that he is able to exhibit.

At John Murray Junior High School (35) little effort is made to evaluate each student's daily or weekly work. Some students desire evaluation, and the teacher may comment that the work is excellent or very good, but regular grading is not done. In fact, an attempt is made to avoid threatening or evaluative situations. The primary evaluation is student evaluation with informal teacher reaction to the child's intellectual, emotional, and physical development. However, at the beginning and end of the year, standardized tests of achievement in personality are administered for diagnostic and program evaluation purposes, but not for evaluation of the child in the normal academic sense. Personality tests are administered at the end of the year to determine whether or not changes in the self-concept have taken place and they are only a validating or objective means to corroborate student evaluation of what the year meant to him.

Although G. S. Skiff Elementary School (3) does not place primary reliance on student self-evaluation, they have made special efforts to evaluate the attainment of instructional objectives which are not usually measured. With the cooperation of the EPIC Evaluation Center in Tucson, Arizona, they have developed an Affective Behavior Checklist which rates such behaviors as attitudes toward self, group, and school society.

Additional observed student behaviors were listed as: social role, nonparticipating behavior, response to teacher expectations, classroom effort, status, response to teacher corrections, handles conflicts with other students, special problems, and special mechanism for gaining attention.

IPRIP

STUDENT
PROGRESS
REPORTS

No. 16F

The old-fashioned report card had one great advantage--parents thought they understood it. Reporting a student's progress under individualized instructional procedures poses some new problems, especially when all children succeed at some level in all subjects. One theory suggests that the report should merely indicate how much a given child has done in comparison with other children in his age or group, but this proved to be an oversimplification when it was discovered that in most situations children were learning different things.

Most schools are still issuing the traditional form of report card. Many schools are supplementing the report card with parent-teacher conferences and some with parent-student-teacher conferences. A smaller number of schools have discontinued the report card and rely on the conference alone. Other schools have developed new and more complex forms of reporting. Some schools report that it is a serious concern, but they simply have not had time to work on the problem as yet. Other schools attempt to minimize the necessity of doing anything about it, suggesting instead that the whole concept should be deemphasized.

Traditional Reporting Procedures

Roy High School (33) reports that, while traditional report forms are used in subjects which have traditional names, the content of those courses is strictly between the teacher and the student. The teacher informs the student of his evaluation as nearly as possible according to the following criteria:

A - For significant academic achievement
B - Working near capacity
C - Average work
D - Below average
F - For a person who can do something but doesn't

The attempt to deemphasize grading is explained by the Urbandale High School (28) principal:

We feel that learning should be stressed over grades in education. Grades in the usual sense have been socially and emotionally damaging to children. Grades often reward the bright (maybe creating a false sense of values) and reject the below average student. In

order to promote the ideal of learning, Urbandale High School does not maintain an academic honor roll, offers some pass-fail courses, conducts educational activities which are not graded (option days, Quest Days, seminars, etc.) and encourages students and teachers to openly debate the value of learning over grades.

In the Haxtun Public School (41) the individualized program at the elementary level has supplemented the information normally given in the report card.

Basically, we've tried to tell the parents how far the child has gone and how well he is doing. We grade children in comparison with themselves and how they are doing in comparison with the group.

At Punahou School (43) a new program is being used for grading at the secondary level in nonrequired courses. The president stated:

I think the pass-fail system we are putting into effect is going to change behavior. It is going to get us out of some of the grading requirements, and the you-must-cover-this kind of hangup. The pass-fail program is in elective courses, those not required for graduation.

In total, more than 43 percent of the schools visited used traditional report cards with letter or number grades reported for each subject.

Traditional Report Cards Plus Conferences

Juliette Low Elementary School (13) is typical of schools that use both traditional report cards and parent conferences. The principal stated:

The board says we must have one unified report card for the system, but we compromise. We are comparing the child with himself rather than with his peer group. The report card is sent home four times a year, and we have parent conferences continually. We want at least two conferences with parents every year, but most of them have been in more often.

The Winnetka Public Schools (25) use the "Goal Record Card" which is not only a report card but also a guide for students.

The child is helped in his evaluation of his own growth by carefully kept goal cards. The teacher is able to evaluate segments and even the totality of what has gone on in the classroom. Parents in their conferences with teachers can gain an appreciation of their child in his many dimensions, of his teacher in her many roles, and of the school system in its flexible, yet orderly educational program.

Matzke Elementary School (6) stresses the parent-teacher dialog, but according to the principal:

We also have a report card. The only difference in the card is that the child's level is identified. For example, when he is

graded in reading, the parents are told what level he is reading on and he receives one of three grades at this point: A, B, or C. A grade of A is excellent progress, B is good progress, and C is acceptable progress. We have a committee working on a reporting system which will completely do away with letter grades and will communicate how children are doing in individual skills. The reporting system will operate on a 4 1/2-week basis. We will include regular parent conferences in this because we want the parents to quit thinking about children in terms of grades per se and think about them in terms of their individual progress and the skills that they are acquiring.

In total, nearly 30 percent of the schools employed a combination of report cards and scheduled parent-teacher conferences for reporting student progress to parents.

Conferences Only

East Elementary School (17) clearly demonstrates the case and philosophy of the conference in reporting to parents. The principal explained:

We do not give any grades here, that is, no letter grades. Our reporting is all done on a parent-teacher conference basis, and it's a revolving type arrangement. We don't set up a day for it. We have a parent-teacher conference at a time that we call a "moment of need." We have a minimum of three during the year, and some children have more. Very often the child is brought into the conference so it becomes a three-way conference. We want to get the report of success, or failure, or difficulty into the open to be sure the child, the parent, and the teacher are all on the same frequency.

Shaw View School (16) adds a new dimension to reporting student progress by the parent-teacher-conference.

If we believe in individualization for children, then we must accept the idea that the different teaching teams will organize and function differently. Pupil evaluation is done as a cooperative endeavor so that more than one teacher is involved with the evaluation of students. Parent conferences are conducted as a group so that parents will meet the entire teaching team that is dealing with the individual students.

New Reporting Forms

Parkside Elementary School (10) in its Continuous Progress Plan has developed a new report form. The principal supplied the following information:

To show the parents where their children are in the program, we make up report forms in the subject areas. In reading, for instance,

we list all the books in the Ginn series and all the reading skills that are covered. Then we fill in the appropriate boxes according to what skills Johnny has accomplished. We do the same thing in our social studies program. We also show what we are trying to individualize and what areas are nongraded.

At Granada Community School (15) the orientation material for parents explains:

Our primary focus for reporting to parents is the parent-teacher conference. We do have an extensive form called a pupil personnel inventory which may be used during conferences. We do have a report form with O, S, N grade designations. This form, we feel, does not report as well as a conference, but it is available upon parent or child request to a general maximum number of four during the school year.

The pupil personnel inventory is too extensive to review, but it serves as a descriptive report of all academic and activity subjects in the school plus a general description of the child's behavior in various school situations.

Cashton Elementary School (24) has developed contracts for all basic subjects. Each contract has a criterion test, and the pupil must pass the test before he can go on to a new contract. A record is kept of the progress of each student by contract, and there is a spread of 15 to 20 contracts among students. The problem the staff faced was to report these facts to parents. They discovered that they had to give letter grades because of parent expectations. The difficulty arose because no student who passed the contract could get less than a *C*. The only way a student could get a *C* was if he did not pass the test the first time around, and even that was an arbitrary ruling. In order to give the forced letter grade more meaning, another sheet was filled out to go along with the report card. It was used for just the subjects in which contracts had been developed. The separate sheet listed four additional points on which to rate performance: (1) knows basic facts, (2) does accurate work, (3) works well by himself, and (4) cooperates with others.

On each point the teacher rated the child *high*, *average*, or *low* in each subject. The hope was that the additional information would enable parents to cooperate with teachers in increasing motivation or cooperation if necessary.

At Nova Schools (44) progress is recorded by teachers on perpetual inventory sheets for each content area. These are summarized and reported to parents in each of two written reports, one mailed on February 15 and the other on June 30. In addition, there are two regularly scheduled parent-teacher conferences during which a

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"Conference Guide and Record for Parents and Teachers" is completed.

Melbourne High School (37) has two complications in its reporting procedures. First, the phased program raises the issue of varying levels of difficulty of work for students registered for the same course. This was handled as follows:

> *Students in phases 3, 4, and 5 are marked in the conventional* A, B, C *manner. Students in phases 1 and 2 are marked by* S *and* U *(satisfactory-unsatisfactory), in order that mark competitiveness will be decreased. In addition, students may choose one subject which they wish to take on a pass-fail option. This is to encourage the reluctant student to take a difficult course under little or no mark pressure. The transcript and report card always list the phase and mark of each course taken, plus an interpretation of the meaning of each phase. There are no weighted marks.*

Report cards are issued each 9 weeks, and the cards do not have to be returned. The final cards are mailed home. Special "evaluation cards" have been developed for Quest students, the independent study program.

Barnsley Elementary School (21) was faced with a standard county report card with *A, B, C's* and found it impossible to report the student's progress toward their objectives. The staff redesigned the report card. It emerged as a:

> *...checksheet of skills, more-or-less. It's a pass-fail sort of thing which we call Satisfactory-Needs Encouragement. It really gives a parent better information.*

The followup to the "test case" was:

> *The superintendent and the board of education have become concerned because many schools in our county have seen what we've done to our report cards; so now a lot of them started to do their own. Now, they have appointed a committee.*

Sample Reporting Forms

Following are various types of forms being used to report on student progress in individualized instruction.

GRANADA COMMUNITY SCHOOL - PUPIL INVENTORY

NAME _____

READING

In an individualized or self-selective program, the approximate level at which the child reads with ease and comprehension is _____.

He/She is most interested in the following kinds of books _____

_____

He/She does or does not (cross one out) have reading in a series (including Programmed Materials.) He/She is using _____

_____ Level _____

(Circle one or more) He/She seems to have 1. No reading problems 2. Problems in comprehension. 3. Phonetic word attack skills problems. 4. Sight vocabulary problems 5. Problems in discriminating letter differences 6. Problems with oral reading 7. Other problems as follows _____

_____

_____

WRITING

The child has had a minimum of one experience weekly in creative writing. ___ Yes ___ No
He responds to creative writing with good interest. ____ Yes ____ No.

He seems to enjoy the following type of creative writing best _____

In writing to communicate information, he can write clearly and convey his meaning well. ___ Yes ____ No. If no, the following briefly describes his problems _____

_____

_____

He is more adept at (manuscript) (cursive) writing (when cursive has been learned).

ART

Does he indicate (confidence in expressing his own individuality) in art or does he (feel more secure in "copying someone else). Circle whichever condition is appropriate.

MATHEMATICS AND ARITHMETIC

In arithmetic, the latest skill which he/she appears to have mastered is _____

_____

(Check one or more of the following)

____ In arithmetic he/she understands processes but makes errors in drill or repetitive assignments.

____ In arithmetic he understands processes and does repetitive assignments carefully and accurately.

____ He prefers not to do repetitive assignments after having mastered a process.

____ He seems happy doing repetitive work after mastering the process.

____ He seems to have great difficulty in mastering the processes of _____

_____

He is able to develop process understandings independently (example: he can derive for himself the relationship between adding and multiplying.) ____ Yes ____ No.

He is able to do narrative problems easily and accurately. ____ Yes ____ No.

He has difficulty establishing logical relationships in narrative problems. ___Yes ___No.

In mathematics he works well with manipulative materials and develops pertinent relationships ___ Yes ____ No.

In mathematics he can deal effectively with abstract relationships using other than numeral symbols. ___ Yes ___No.

In published material, he has worked most recently in _____

_____

Approximate page _____ Level _____

SPELLING

His spelling lists are derived from _____

_____

He has (few) (some) (many) problems spelling in compositions.

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LANGUAGE ARTS GOAL RECORD CARD 7

Pupil_____ Teacher_____ Year_____

See **CURRICULUM GUIDE** for GROUP WORK and PREVIEWS to be done.

PART 1 — GENERAL LANGUAGE	Date
1. Punctuation Review I	
2. Comma in Apposition	
3. Punctuation Review II	
4. Divided Quotations	
5. Punctuation Review III	
6. Extracting an Outline	
7. Developing an Outline	
Report Title:	
8. Minutes of Meeting	
9. Punctuation Review IV	
10. Library Lessons	

PART 2 — GRAMMAR	
1. Sentence Structure	
Subjects & Predicates	
Simple Sentences	
Compound Sentences	
2. Prepositions	
3. Conjunctions	
4. Interjections	
5. Expletives	
6. Nouns	
Types	
Common, Proper, Abstract, Concrete, Collective, Compound	
Uses	
Subject	
Predicate Nominative	
Direct Object	
Indirect Object	
Object of Preposition	
General Review — Nouns	
7. Pronouns	
Subject	
Predicate Nominative	
Direct Object	
Indirect Object	
Object of Preposition	
General Review — Pronouns	

PART 2 — (CONTINUED)	Date
8. Verbs	
Agreement with Subject	
Tense	
Conjugation	
Auxiliary Verb Phrases	
General Review — Verbs	
9. Adjectives	
Articles	
Proper	
Predicate	
Possessive	
Comparison	
General Review — Adjectives	
10. Adverbs	
Recognition	
Comparison	
General Review — Adverbs	
11. Sentence Diagrams	

Individual Projects:	

SPELLING

Beginning:
Level_____ List_____

First Report Period:
Level_____ List_____

Second Report Period:
Level_____ List_____

End of Year:
Level_____ List_____

Auxiliary Spelling Lists:	Date

Winnetka Public Schools

SOCIAL STUDIES GOAL RECORD CARD 7

Pupil_____ Teacher_____ Year_____

Objective: An understanding and appreciation of the interrelatedness of countries of the world.

AREA OF STUDY

GEOGRAPHIC TERMS & CONCEPTS	Date
.....	
.....	
.....	
WESTERN HEMISPHERE	
Mexico	
.....	
Central America	
.....	
Caribbean Area	
.....	
South America	
.....	
.....	
Canada	
.....	
CURRENT EVENTS (List publications)	
.....	
.....	
FIELD TRIPS	
.....	
.....	

EASTERN HEMISPHERE	Date
Australia	
.....	
Africa	
.....	
Asia	
Near East: Iran, Iraq, Turkey, Arabia, Israel	
.....	
Middle East: India, Pakistan	
.....	
Far East: Japan, China, Korea, Mongolia, Laos	
.....	
U.S.S.R.	
.....	
Europe	
.....	
OTHER PROJECTS	
.....	
.....	
.....	
.....	
.....	

Winnetka Public Schools

SCIENCE GOAL RECORD CARD 7

Pupil_____ Teacher_____ Year_____

	Date
THE SCIENTIFIC METHOD:	
How Scientists Think and Work (6 Concepts)	
THE CELL: UNIT OF LIFE	
Types and Properties of Living Cells (8 Concepts)	
Characteristics of Simplest Animals: Protozoa (7 Concepts)	
Microscope Projects_____	
_____	
_____	
TEST	
CLASSIFICATION OF LIVING THINGS	
Animal Classification (5 major Concepts)	
Plant Classification (3 major Concepts)	
Enrichment Studies_____	
_____	
TEST	
PROPERTIES OF MATTER AND KINETIC MOLECULAR LAW	
Matter and Energy (4 Concepts)	
Properties of Solutions (2 Concepts)	
Kinetic Molecular Law (2 Concepts)	
Our Ocean of Air	
Enrichment Studies_____	
_____	
_____	
TEST	
HEAT ENERGY AND ITS EFFECTS ON MATTER	
Change of State (5 Concepts)	
Individual and Small Group Studies_____	
_____	
_____	
TEST	

Winnetka Public Schools

MATHEMATICS GOAL RECORD CARD 7-8

Pupil _____ Teacher _____ Year _____

REVIEW:	Fall Score	Spring Score
Test 1 – NUMERATION		
2 – SETS		
3 – ADD. & SUBT. OF WHOLE NUMBERS		
4 – MULT. & DIV. OF WHOLE NUMBERS		
5 – NUMBER THEORY		
6 – MEANING OF FRACTIONAL NUMBERS		
7 – ADD. & SUBT. OF FRACTIONAL NUMBERS		
8 – MULT. & DIV. OF FRACTIONAL NUMBERS		
9 – MEANING OF DECIMAL FRACTIONS		
10 – OPERATIONS WITH DECIMAL FRACTIONS		

GOALS:	Date
I – NUMERATION	
a) Billions ( )	
b) Exponent Form ( )	
II – WHOLE NUMBERS	
a) Addition and Subtraction ( )	
b) Multiplication ( )	
c) Division ( )	
d) Meaning of Properties ( )	
III – NUMBER SENTENCES	
IV – PRIMES AND FACTORS	
V – FRACTIONAL NUMBERS – COMMON	
a) Meaning ( )	
b) Addition and Subtraction ( )	
c) Multiplication and Division ( )	
VI – DECIMALS	
a) Meaning ( )	
b) Addition and Subtraction ( )	
c) Multiplication and Division ( )	
VII – GEOMETRY – NON-METRIC	
a) Point, Line, Line Segment ( )	
b) Plane Figures ( )	
c) Rays and Angles ( )	
VIII – RATIO AND PROPORTION	
IX – PERCENTAGE	
a) Meaning ( )	
b) Problem Solving ( )	
X – GEOMETRY – METRIC	
a) Perimeter ( )	
b) Area ( )	

AFFECTIVE BEHAVIOR CHECKLIST
for
WILSON SCHOOL DISTRICT NO. 7
Phoenix, Arizona

EPIC EVALUATION CENTER
Tucson, Arizona

IBM 519 PRINTED IN U. S. A.

IDENTIFICATION NUMBER

	OBSERVED		OPPORTUNITY	
ATTITUDES TOWARD SELF				
		1		Verbally active with students in classroom.
		2		Verbally active with teachers in classroom.
		3		Completes assignments (hands papers in on time).
		4		Demonstrates low frustration level (angers, sulks).
		5		Withdraws (shy, bashful, doesn't respond verbally).
		6		Competitive (responds beyond requirements).
		7		Brings outside materials to class without teacher request.
		8		Uses resources without teacher direction.
		9		Not accepted by classmates (appears to have no friends).
ATTITUDES TOWARD GROUP				
		10		Does not interact with group (stays out of games).
		11		Attempts to dominate groups (bossy, wants his way).
		12		Quarrelsome (loses temper; argues).
		13		Accepts group decisions (helps in group activities).
		14		Exhibits leadership (respected, leads in activities).
		15		Indicates listening skills (responds with expected feedback).
		16		Courteous (displays acceptable manners)
		17		Has friends (liked by others, popular).
ATTITUDES TOWARD SCHOOL AND SOCIETY				
		18		Physically abuses others (fights, badgers, hits).
		19		Verbally abuses others (curses, name calling, makes fun).
		20		Defaces property (writes on desk, tears books).
		21		Takes things not belonging to him.
		22		Wastes materials (paper, crayons, etc.).
		23		Disrespectful during patriotic situations.
		24		Disobeys classroom and school rules.
		25		Defies adult authority (rebels to teacher openly).
		26		Irresponsible (must be supervised at all times).
		27		Chronic absentee (misses school, tardy).

WILSON SCHOOL DISTRICT No. 7

Student: **PRIMARY RECORD**

Type of Program:

Reading Readiness

Motor Coordination
_____ Large muscle
_____ Small muscle
_____ Eye-hand coordination

Discrimination
Visual
_____ Gross
_____ Detailed

Auditory
_____ Gross
_____ Detailed

Math Readiness
_____ Positional comparisons
_____ Pattern sequence
_____ Comparison of sets
_____ Concept of number system
_____ Recognition and writing of numerals
_____ 0 - 10
_____ 10 - 100
_____ 100 - 1000

Communicative Skills

19 -		19 -		19 -		19 -	
1	2	1	2	1	2	1	2

These are typical patterns of performance:

Working independently at an accelerated rate.
Progressing at a steady rate.
Finding subject difficult. Activities are teacher-directed.

ORAL EXPRESSION
- Speaks clearly and plainly
- Speaks in complete sentences
- Shares experiences verbally
- Participates in class discussion
- Relates a story in sequence
- Reads with expression

WORD ATTACK SKILLS
- Recognizes consonant sounds
- Recognizes vowel sounds
- Recognizes root words
- Recognizes prefixes
- Recognizes suffixes
- Divides words into syllables

COMPREHENSION
- Listens and follows directions
- Uses context clues
- Identifies main idea
- Recalls facts
- Draws conclusions
- Places events in sequence
- Locates information

WRITTEN EXPRESSION
- Writes simple sentences
- Capitalizes correctly
- Uses punctuation correctly
- Spells high frequency words
- Expresses ideas in writing

Arithmetic Skills

19 -		19 -		19 -		19 -	
1	2	1	2	1	2	1	2

ORDER OF NUMBERS
Place Value
- Ones
- Tens
- Hundreds
- Thousands

ADDITION
- Repeats combinations 1 thru 9
- Can do 2 or 3 digit addition
- Can do column addition
- Can carry

SUBTRACTION
- Repeats combinations 1 thru 9
- Can do 2 or 3 digit subtraction
- Can regroup

MULTIPLICATION
- Repeats combinations thru 5
- Multiplies by one-place number

DIVISION
- Can divide by one-place number

MEASUREMENT
- Can measure length
- Can tell time

FRACTIONS: Can identify fractional parts

PROBLEM SOLVING
- Solves oral problems
- Solves written problems

Student:

Intermediate Record

Attendance

Year	19	19	19	19
Days in Session				
Days Present				
Days Absent				

	Code	Date	Code	Date	Code	Date	Code	Date
Entry								
Withdrawal								
Re-entry								

Withdrawn from Intermediate bloc (Date) _____

Social Sciences

Year	19		19		19		19	
Semester	1	2	1	2	1	2	1	2
Map Reading Skills								
Finds directions								
Utilizes key								
Utilizes scale								
Interprets various kinds of maps								
Utilizes latitude and longitude								
Identifies political divisions								
Locates and Identifies Global Features								
(Oceans, Continents, Land Forms)								
Can Place Events in Sequence								
Can Use Scientific Method								

Other Placement Information

Instructional Reading Level _____

Instructional Math Level _____

Teachers:

19 : _____

19 : _____

19 : _____

19 : _____

Personal Adjustment

(Check indicates need for attention)

Year	19		19		19		19	
Semester	1	2	1	2	1	2	1	2
Adjustment to School Work								
Assumes responsibility								
Completes assignments								
Uses time effectively								
Works in groups								
Is consistent in work								
Personal - Social Relations								
Is overly dependent								
Is overly aggressive								
Is withdrawn								
Has poor peer relationships								
Disturbs others								
Is hyperactive								
Daydreams								
Disrespects school rules								
Relates poorly with adults								

Date	Type of Test and Form	Results

Date	Type of Test and Form	Results

Psychological Referral (Date) _____

Wilson School District No. 7, Phoenix, Ariz. (2-68)

Noting Detail	1	Identifies details of illustrations, et.				
	2	States details of short story, etc.				
	3	Of real experiences.				
	4	Of phrase, sentence paragraph, etc.				
	5	From maps, graphs, charts, etc.				
	6	Contribute to solution of problem				
	7	Distinguish fact from fiction				
	8	Support plot, mood, motives				
	9	Main titles in outline				
Main Idea	10	Identifies main idea in ill. pictures.				
	11	Chooses titles for pictures, stories.				
	12	Main idea and subordinate ideas				
	13	Identifies proper title from list				
	14	Writes summary				
Sequence	15	Retells in correct sequence				
	16	Organizes in logical sequence				
	17	Organizes in order of importance				
	18					
Critical Thinking	19	Answers "why & how" questions				
	20	Asks "how and why questions				
	21	Classifies objects into categories				
	22	Classifies words intc categories				
	23	Classes abstract into lge. category				
	24	Uses multi-meaning words				
	25	Describes how characters feel				
	26	Interprets types of literary style				
	27	Describes sensory images				
Study & Ref.	28	Uses tabel of contents,- index, etc.				
	29	Uses dictionary for word usage				
	30	Uses encyclopedia, atlas, etc.				
	31	Uses skimming when necessary				
	32	Uses graphic materials:maps etc.				
	33	Outlines reading material				
	34	Summarizes in writing or oral form				
Silent & Oral Rd.	35	Increases rate of silent reading				
	36	Increases comprehension				
	37	Enunciates clearly and distinctly				
	38	Uses different styles: prose, poetry				
	39	Uses phrasing, inflection, Punct.				

Last_____ First_____
Grade_____ Teacher_____

Classroom Behavior: A,B,C,D,F

Quiet			Noisy
Leader			Follower
Rude			Courteous
Dependent			Independent

Circle appropriate descriptions:
Whiney, giggley, tattler, shy, indifferent, dreamer, insolent, dishonest, bully, lazy, tease, showoff, poor sport, I can't, clown, distractable.

Scholastic Achievement: A,B,C,D,F

Reading:

1st	2nd	3rd	Ind.

		2	3	4	5	6	7	8	9

Addition	Sub.	Mult.	Div.

Classroom atmosphere should be:

Nurturing			Firm
Predictable			Not Pre
Sm. Learn. steps			Big leap in learn.

IPRIP

No. 16G

EVIDENCE OF EFFECTS OF INDIVIDUALIZED INSTRUCTION

Although relatively little attention has been given to evaluative procedures, some schools have tried to obtain evidence as to whether individualizing instruction would improve the effectivenss of their school in terms of student learning. Fifty percent of the schools visited had no formal evidence of the effectiveness of their procedures and no developed plans to obtain such evidence. However, four schools have extensive plans for evaluation, and two of these merit review. Seventeen schools had test evidence relating to academic achievement. Many of the schools reported questionnaire, attendance, dropout, and disciplinary data. Further, the subjective reactions of teachers, learners, parents, and board members and other nontest-based evidence merit review in that they may provide the basis for hypotheses for designing more meaningful and useful (in decisionmaking) studies on the effects of individualized instruction.

Formal Test Evidence

While test data may be unrelated to the objectives of the school, and the actual learning experiences provided by it, there may be factors associated with differences observed either among other schools or between a given school and its former programs. Many individuals are interested in knowing how students performed on traditional academic measures after experiencing individualized instruction.

Parkside Elementary School (10) reported that academic growth of individual children had been documented, and there were gains from 2 to 4 years in 1 year as measured by standardized tests. However, because data have not been treated statistically, there is no evidence that the program is providing greater overall achievement than the former program.

Meadow Moor Elementary School (12) was advised by its district office that scores on standardized achievement tests "...indicated that (Meadow Moor) was the highest in the district."

L. E. Berger Middle School (23) administered standardized achievement tests to all students at the beginning and end of the school year and the results indicated, "...1 1/2-year gains in 1 year."

Duluth Public Schools (42) have administered the Iowa Test of Basic Skills at the beginning and end of each school year to both individualized and traditional schools for the past 4 years. The evidence is "that we have had no more gains on these tests than we have had in the self-contained program; it has been a standoff." The superintendent of schools explained:

> *There is nothing startling about these findings. We did not purport that we were going to do a better job on skill development, although I think eventually we can, even on standardized tests. However, our overall objective in the whole program is an attitude change, and we don't have the kinds of instruments which you might use for an evaluation of that objective.*

Juliette Low Elementary School (13) and another school in the same district which had developed an individualized program were involved in an--

> *...intensive study on achievement. Data collected indicate that there were no significant differences between two comparison schools which were traditionally oriented and the two schools which were oriented to individualized instructional programs.*

Wilson Elementary School (18) administered standardized achievement tests 7 months apart. "The results showed that all of the different levels grew over a year in comprehension. In spelling, the growth pattern averaged 1.2 years."

Franklin Elementary School (19) reported that the Iowa Test of Basic Skills had been administered at the school for a number of years. The records indicate that the school had "...averaged a mean of 4 months behind national norms." Since employing their new individualized instructional procedures, the same tests "... indicate that the school is now right on the national norms."

Brittan Acres Elementary School (9) administered the California Achievement Test in October 1967 and again in October 1968. During the entire year students were using Project PLAN materials. According to the principal:

> *Project PLAN students were compared with control students in reading vocabulary. It was found that 5 percent of the PLAN students gained from 4 to 4.9 grade levels during that year. At the same time 2.9 percent of the PLAN students gained from 3 to 3.9 grade levels, but 8 percent of the control students also gained from 3 to 3.9 grade levels. The fact that more PLAN students gained more grade levels indicates that restrictions at the top are off, grade-level wise, when using the Teaching Learning Units (TLU's) of Project PLAN; whereas in the control group they were hemmed in by grade levels. As you move down the scale, it was*

found that 25 percent of the PLAN students gained 1 to 1.9 years compared with 16 percent of the control students. In reading comprehension, and this is the score I am most enthusiastic about, 91 percent of the PLAN students made gains of varying levels, while 81 percent of the control students made gains. In arithmetic reasoning the two groups are just about the same. In arithmetic fundamentals the Project PLAN students showed about a 1 percent advantage over control students. The point of getting into the project had to do with increased student involvement in their learning so that children would stay "turned on" for a longer period of time.

The UCLA Laboratory School (2) administers Stanford Achievement Tests. According to the principal:

We found that, while we had a relatively normal distribution in achievement at the beginning stages, at the 10-, 11-, and 12-year-old stages we had a tremendous skewing to the top stanines of the Stanford Achievement Test. We take this as evidence that what we are doing here is making a difference.

The Matzke Elementary School (6) reported that the Otis Quick Scoring IQ test revealed that the mean IQ of students in the school was an even 100. However, "...standardized achievement test scores were above the national norms. Further, there is a much wider range of scores than there were under the previous instructional system."

Miami Springs High School (31) reports that 40 percent of its students were born in Cuba and are Spanish-speaking. It is considered that standardized achievement testing is not ideally suited to the situation. However, the principal reports, "...the evidence doesn't indicate that our students do any worse on standardized examinations. We have had our merit scholars and students at Chicago, Princeton, and Harvard as well as lots of other places; and they are doing exceedingly well."

Southside Elementary School (20) has been working with children from disadvantaged environments and has been engaged in an extensive 5-year evaluation program using a battery of tests.

The general results are favorable during the school year; however, there are losses during the summer months. As children have continued in the program there has been a gradual increase in retention. The children appear to hold their own during the summer better in each succeeding year, and gains continue during the year.

Lakeside Elementary School (7) reports that the school averages 1 to 1 1/2 years above grade level on standardized achievement tests. However, the mean IQ of the students in the school is approximately 110.

Mary Louise Aiken Elementary School (8) reports that "...mean scores on standardized achievement tests are above grade level."

It was pointed out at Milton Junior High School (38) that:

> *Although the objectives of the materials that we have developed to individualize instruction do not exactly fit with standardized tests, we do have evidence from the regular administration of standardized tests that we are doing no worse than we were before, although we do not have any evidence that we are doing any better. However, it is quite clear from an inspection of the standardized test that it is measuring things which are different from the materials on which the children learned.*

In summary, 17 schools were visited which had standardized achievement test data. Some schools found that there were no differences in achievement either with control schools or with their own previous programs. A larger number reported favorable findings, but there are no reports of individualized instructional programs resulting in less achievement. The general reaction of administrators and staff was that the standardized achievement test is an inappropriate instrument to measure the objectives of their respective programs. Nevertheless, most felt it was essential to know that students could perform satisfactorily on traditional measures of achievement.

Informal Evidence

Teacher reaction, almost universally, is that there is more work involved in both initiating and maintaining an individualized instruction program. At the same time they report, almost universally, that they have never been more satisfied with what they are doing for their students, and that they could never return to a traditional group-oriented instructional program. On the other hand, there are some teachers who do not feel comfortable with every student working on a different task. These teachers seem unable to cope with the apparent disorganization of the situation and ask to be returned to a traditional classroom. One of the most significant adjustments for a teacher is during the first 2 to 6 weeks in an individualized program when students are learning a new role in the instructional process. A few teachers have had very successful teaching experiences in an individualized situation in terms of student satisfaction and achievement, but are returning to traditional procedures because they seem easier and less demanding.

At Southwest High School (27) it was admitted that the individualized program--

> *...to a certain degree was railroaded. We had lots of skeptical people and if we had put it to a vote of the full staff, we might have had a hard time getting a majority. I would say now that about 90 percent are in favor. There are 10 percent still dragging their feet, and the major reason is that they still are content-oriented rather than concept-oriented; and this is a major road block.*

A teacher at Roy High School (33) said:

I taught in a traditional system and it just doesn't seem like I'm accomplishing what I did in the traditional system because I can't show results on paper, how much we've covered, and all that. But then I remember all those spontaneous learning experiences that I think are more valuable than having the neat rows, the lectures, the study hour. There's spontaneity to this system; the kids seem to be learning how to learn, the joy of learning.

There were some reports that teachers who were not involved in individualized programs, and had never been involved, where very critical of it.

Student Reaction

As one would imagine, student reaction is practically all positive. Several schools report that a small proportion of students, usually less than 5 percent and sometimes less than 1 percent, try to take advantage of the fact that they have greater freedom. The report is most frequently heard at the secondary level, but it also occurs at the elementary level. At Meadow Moor Elementary School (12) one teacher had responsibility for only six children. All six had experienced difficulty in assuming responsibility to work on their own. One student had been moved back to his large, regular class, but it didn't last for the full day. His reaction was, "Well, I didn't make it, but I think I'm learning what I'm doing wrong."

Another student at John Murray Junior High School (32) reacted very emotionally when he was not told what to do. His reaction was, "This isn't teaching; you're supposed to make me do something." A different idea came from a boy at Grand View High School (40) who said, "I was interested in farm plants and how to improve their growth. I also wonder how we can control the weeds in our farm plants. For my project this week I've got to do a research paper in order to be eligible to go to the University of Utah for a symposium in science they're having in March." When asked his reaction to the individualized program, he answered, "I'd say it's a lot more work, but this way you don't have to study something you're not interested in; you can specialize in one certain field and study it more."

Several schools have conducted student surveys to determine their reactions. The findings are strongly in favor of individualization. For example, at Brittan Acres Elementary School (9) at the fifth-grade level there were 43 strongly positive, and one who didn't like it. It turned out he liked having his own desk and a place to put his own things. Each child had a cubby hole by the side of the room, but he was not satisfied with that. The child's mother said she would rather not have him continue in the program; so he was transferred to a traditional school. At Hillside High School (30) the person who had devised the individualized reading program said,

"Last year we did a survey of the kids' opionions and reactions and I read the reports that they wrote. They were unanimously favorable to the operation. They know they are getting something."

The principal at Matzke Elementary School (6) described the reaction of the younger child who experiences the most difficulty in school:

> *One of the worst ways to evaluate this program is on achievement test scores because achievement tests, by their nature, do not test the kind of things you are trying to do with children. They can't test children's level of independence, their inquiry or innate drive to learn, or their curiosity. We are trying to look at other ways of evaluating this program. One of the ways we've looked at is plotting children's behavioral patterns, and we're doing this with a behavioral matrix where children rate themselves, their levels of independence, their dealings with other people, and this kind of thing. Children rate themselves and teachers rate themselves and teachers rate them. The evidence is that their attitudes have changed dramatically. They love school. We have cases where children come into this school with a phobia against school; they hate school or they may be on tranquilizers so they can endure it. After this kind of a program, this disappears.*

Board and Parent Reaction

Parent reaction to individualized instruction is often a little skeptical, especially when first informed of it. The concern is that it will not be as good as a more rigid, structured program. This attitude seems to dissipate rather rapidly as a result of student enthusiasm. However, if the student is one who has a record of difficulty, the new program is unlikely to make much difference initially. Of course, the big difference now is that the parent has something to point at, something which explains all the child's difficulties--obviously, the new program. Board reaction was neatly summarized by a superintendent who said, "If you have parent support, then you have board support."

At Franklin Elementary School (19) the principal admitted that parents were a problem for a while.

> *We had to explain the program to some parents who wondered why the students could be allowed to choose the things they wanted to do. And we had parents who thought that the whole idea was "for the birds." But I am guessing that about 90 percent of our parents like the program because we are doing so many more things and are offering so many more things than we could before, especially in remedial work and one-to-one tutoring, plus the foreign languages.*

The principal at Brittan Acres Elementary School (9) indicated that there was--

> *...a lot of parent interest in the first year of the program, but a lot of hesitancy last year. While there was much questioning, at the same time there was immediate support. I developed quite an ambitious parent orientation program. I had three or four*

large group meetings with the parents, and some of these were rabble rousing, questioning sessions which lasted for hours. I would answer their questions and we had some parent organization material from the American Institute of Research to give them. There was a Teaching Learning Unit, TLU, for adults to work through. The main concern of the parents was that they thought the children were on their own too much and were not getting enough teacher attention. They were concerned that their children were not covering the usual expectations of the grade. I explained to the parents that the Teaching Learning Unit is really an improved quality of contact with the teacher, and that the teacher is free all day to interact with students. The teacher is continually available to help students with individual problems, and she can also call small groups together if there is a common problem. It is really just a matter of educating the parents--letting them find out about the teacher context we use and letting them compare this context to the one which has the teacher standing in front, talking to everyone.

Shaw View Elementary School (16) reported that they had conducted a survey sending a questionnaire home to parents:

The results indicated that 85 percent of the parents like the program as well as or better than the previous program. The 15 percent that didn't like the program reacted to a change in the grading system, and they didn't think learning could take place in large groups with so much noise. Their final point was that this wasn't the way they did it when they were in school. Board reaction has been favorable.

The principal at Barnsley Elementary School (21) said:

Parents evaluate the program through their children's perceptions and in conferences with teachers. Parents have accepted the program and are very supportive of it. In fact, I am amazed at the small number of dissident parents I have out of 550 families. The first couple of years the school was in operation, I scheduled morning coffee meetings, and I would have parents in and explain some segment of the program that I thought might be of particular interest to them. Actually, the children going home and talking about school are the PR agents, and rarely do you find a child in this school who is unhappy. If he is we can make some change as far as his placement is concerned. We can put him someplace where he will be accomplishing something.

The superintendent of schools in Milton, Pennsylvania (38), indicated that:

Community reaction has been pretty favorable. Some parents have made some interesting comments, such as, "We are not quite sure of what you are doing, but whatever it is, keep it up. This is the first time Johnny has been interested in mathematics since he has been in school."

Fewer Disciplinary Problems

At Parkview Elementary School (5) the principal said:
Right now our discipline is better than at any school that I have been connected with because students are taking more responsibility on themselves. This in itself has cut down on our discipline problems in the classroom.

At Wilson Elementary School (18) the principal reported:
Students accepted their new freedom very readily, except in some cases in the upper intermediate grades. We tried to give them more freedom to make decisions and to make choices, but it was chaotic initially. All of a sudden, the kids were asking, "What do I do: the teacher hasn't told me that I have to do this and this and this." We had to go back and do a whole reorientation presentation. Before we would allow them this freedom again, they had to prove that they could work by themselves in terms of independent research and that they could work cooperatively with other people. Once the kids understood the strategy, they reacted better and were able to work more successfully.

At Brittan Acres Elementary School (9) the principal reported:
In general, as far as discipline is concerned, we found that it was much improved in those rooms because there was a reduction in the audience for the students who might be goofing around. There was no reason for them to try to get attention. They weren't getting a payoff because the other students were busy doing independent work.

At Milton Junior High School (38) the superintendent reported:
During the 3-year period we have been in this new program, we have had about three or four students sent to the office for discipline. The traditional experience was that we could get about 10 students a week. The first year we didn't have one, not one. The difference is that the traditional program puts a lot of emphasis on homework. Under the traditional program, students were doing homework and coming to class unprepared. In programs of this type you cannot come to class and not be prepared because everything you do is in class--almost everything.

Better Adjusted Students

At Wilson Elementary School (18) the principal said:
You definitely see a trend in terms of a child's behavior, because the child is much more self-directive and self-selective. He sets up his own rules and goals realistically, in terms of what he can do. There is also a great difference in their behavior. I think discipline problems have almost been eliminated, because the child is able to look at them and try to solve them in a variety of ways.

At Shaw View School (16) a teacher reported that:

One of the things that has impressed me most of all is the mental health that we have. There is less frustration, and it is a lot easier for a youngster in the sixth grade. If the kids feel like working in mathematics and they are really going great on it, they can stick with it instead of being forced into a situation of doing something that they don't want to do. I don't think that all youngsters should be able to do anything that they want to do anytime--I simply feel that it is quite frustrating for a student who is starting a science project and gets right in the middle of an experiment and, bingo, here comes English--and he has to leave his experiment. In comparison with a self-contained classroom I had several years ago, the absentee rate has come down tremendously. There are enough adults in a pod that a child is not stuck with one adult all day. Suppose a child has a one-to-one encounter and the child comes out on the losing end. You have a bad situation between the child and the teacher, and you are stuck with that child the rest of the day unless he goes out for music or something. It's like constant friction all day long. But here, the child goes back to the pod--you may not see him for the rest of the day. The teacher is off the student's back, so to speak. We have eight different people that the student may be able to gain good rapport with--maybe not with a homeroom teacher, but there is always somebody a child actually likes.

Less Truancy and Dropout

The principal at Roy High School (33) presented a description of the truancy and dropout problem when he said:

There are two kinds of truancy, the external truancy where the kid is absent all day; this is very minimal in this school. Missing a class, the internal kind of truancy, is multiplied many times over what it is in the traditional school. This is because there are so many things going on. Our student body president got a truancy report last week and then came in to say that he got busy writing a paper in the library and didn't keep track of time and went over one period while working on his paper. It is hard for me to get really excited about something like this.

At Haxtun High School (41) the report was made:

Our dropout rate is very low here. Last year there were no dropouts. We have no problems with truancy and very few disciplinary problems.

Several elementary schools reported that they had continual reports from secondary schools that their students had gained a disproportionate number of leadership positions. These students are self-reliant. At the secondary level, schools are receiving similar reports from the colleges.

At John H. Glenn Junior High School (35) it was reported:

We have an attendance area which means we should have the lowest

attendance of any of our junior high schools, yet we were at least 2 to 5 percent ahead in attendance in all junior high schools last year at each reporting period. So our attendance has been fantastic, even though we have this huge area--about a third of which is the lowest socioeconomic area in town. We have very few major discipline problems--they have just vanished.

Evaluation Plans

Four schools have developed extensive evaluation plans which might be of interest to school administrators who are concerned about establishing such plans at the same time as they inaugurate new programs.

The Granada Community School (15) developed an elaborate evaluation design. The first phase of the design was *describing the existing program*. The major subpoints here included the focus of evaluation, the collection information, the reporting of information, and the administration of evaluation.

The second major element was described as *process evaluation* and the purpose of part two of the research design was to determine to what degree the *signs* or *conditions of a program* of individualized instruction exist in the school program. Since no school program can presently boast of 100 percent individualized instruction, or is it likely that this will ever be the case, the problem is to evaluate the progress toward individualization.

The third major phase of the evaluation design is *student evaluation*. While phases one and two of the evaluation design dealt primarily with the nature of the educational program, this part of the evaluation is aimed "...at assessing the outcome of the program in terms of student growth, skills, attitude toward learning, and parent feelings about the instruction program." Again, the same subpoints are involved with much greater emphasis on criteria and instruments.

The instrument selected to be used for the first phase was the STEP Test in Achievement (reading, mathematics, and social studies). The second phase involved critical thinking skills, and the school developed its own instruments for this purpose. Student response to the program, the third phase, involved administering a number of questionnaires and rating scales concerning the following: (a) program and strategies, (b) evaluation of self and other students as a result of the program, (d) student approach - avoidance of subject areas, (d) a parent questionnaire, (e) creativity, (f) teacher evaluation and (g) curiosity.

The G. S. Skiff Elementary School (3) is working with Project EPIC, which is the Evaluative Program for Innovative Curriculums in Tucson, Arizona. The plan is to design an evaluative program aimed at the "instructional objectives" of the school, i.e., the organization,

content, method, facilities, and cost. The second area of evaluation involves "the people"--the student, teachers, administrators, specialist, families, and communities. The third area involves the "behavioral outcomes," i.e., knowledge, skills, attitudes, and beliefs of the student. One of the first products of the program was an "affective Behavior Check List" developed for school districts.

Two other schools, Nova Public Schools (44) and the Southside Elementary School (20), have special, long-term evaluation programs. The Nova Public Schools have had a long-term project to assess the impact of individualized instruction. The Southside Elementary School received a Ford Foundation Grant and has evaluated their program for the disadvnataged over a 5-year period. At this writing the final report is being prepared.

PRIP

PROBLEMS ENCOUNTERED

No. 16H

When one considers problems, the first item that comes to mind is money. The adage is that there is really no major problem that money cannot cure. Surprisingly, few schools report a lack of money as a major problem. In fact, 17 of the schools (nearly 37 percent) said they were not encountering any problems worth noting. Of course, the administrators may have been insensitive to problems or unwilling to share them. Yet, it is unlikely that either of these explanations apply because, in these schools, everything appeared to be going smoothly and faculty members could not think of anything to report which they could classify as a serious problem.

Among the remainder of the schools visited (more than 63 percent), the primary concern was with teachers. They not only encountered but caused a wide variety of problems. And, perhaps in many instances they were justified in their behavior because they believed that unreasonable demands were being placed upon them, and they were not provided sufficient training and support. The second major source of problems was parents. In the more affluent areas the usual expectations of what the school ought to demand of children and young people in their opinion were not being met. Some parents became suspicious when children liked school because that wasn't the way that they remembered it. But they voiced other objections and fears. Students do not constitute much of a problem, but some students do encounter difficulty in making the transition from a teacher-directed to a self-directed instructional program, even when given assistance in the new procedures. A number of schools report a serious problem relating to the availability of instructional materials that are appropriate for use in self-instructional situations. Individual schools report problems with their board, relationships between special project personnel and administrators, internal and external communication problems, and cooperation from their State departments and accrediting associations. Each of these problems may be clarified with examples cited from the various schools visited.

Teachers

The Parkview Elementary School (5) principal pointed out one of the problems encountered in the large multiple learning area with

a team of teachers:

First, you must have teachers who are willing to do this, and you have to have a principal who is dedicated to it and willing to give the extra time and effort it takes to make it work. If you have teachers and principals who are willing to work as a team, then there is no conflict. However, if you get a conflict between the principal and any one teacher, you are going to have problems. If that is multiplied by two or three teachers, it is harder to operate because this program needs cooperation. It is quite obvious that all teachers should not be in team teaching schools. Although there are many advantages to the team, there are some teachers who want their own little group; they want their "say" in everything they do. They don't want to spend the extra time it takes to sit down with other people and plan.

At Duluth Public Schools (42), the superintendent stated that the biggest problem with teachers is their inability to relate to individuals. In his words:

The average teacher in the average self-contained classroom teaches a class, a personality of 30, which in a sense has a kind of entity of its own. She treats more the personality of the class than she treats the personality of the individual. I think this is true in 95 percent of the classrooms in this country. Now, there is no longer a class personality; that is gone, and the teacher has to develop a new kind of relationship with the individual students. Most of our teachers today are not equipped to deal with this one-to-one kind of situation and to get to know the child as they never have before. They don't know how to start a kind of personal relationship between teacher and pupil, especially where the teacher is helping that child in a personal way to analyze himself in his own learning.

At Juliette Low School (13) the principal stated:

I think that one of the biggest problems is the openness the teachers have to face; they can never close themselves off. They are always open to scrutiny by their peer group, the other teachers, by visitors that come through, and by administrators who are in and out. Therefore, the teacher has to feel competent about herself and about her ability before she can ever work comfortably in this setting. To be quite frank we have had many teachers who cannot work in a setting like this.

At Martin Luther King Jr. Elementary School (11) the principal reported that they are having a major problem finding the right kind of teachers for the team. Much of the problem was alleviated by using a team interview of perspective candidates, rather than leaving this to the sole judgment of the principal.

John Murray High School (32) reported:

One of the problems we ran into was the threat of this kind of a program to other teachers. By developing this program in isolation

as an experiment on individualized instruction, it became a kind of threat for the regular program teacher.

At Wilson Elementary School (18) the principal said:

I think that the major problem we have had is the "tunnel-vision" of the teachers who are subject-centered. We all have a tendency to do what we've done in the past, and we still think it's effective. The teachers have felt secure with what they've done in the past, and it's hard to break this down. Instead of dropping something they want to add this new approach to the old. They said they were willing to go to individualized instruction, but they wanted to keep the workbooks too.

At Southwest High School (27) it was reported:

One of the greatest fears of teachers was that they were afraid the administration was looking for a way to get excuses to fire a few of them. I had to reassure them that, if they continued at least as well as they were doing now, I didn't foresee their being fired within the next 10 years.

The principal of Harry A. Burke High School (29) said:

A major problem for teachers was that they didn't realize until they got into the program (the previous summer) what a prodigious and tremendous task it was to build your own materials. They found it to be an exhausting job. On the other hand, most of the teachers felt that the development of new materials was one of the most enriching experiences they had ever had. It is great for the teacher if he can survive.

Haxtun Public Schools (41) reported a problem in their junior high mathematics program.

The teacher became a little over enthusiastic and attempted to program a standard textbook in order to individualize it. The standard textbook was not set up for this sort of thing. It is very difficult for some teachers to keep track of all the students when they are working in different places in the same materials.

Pacoima Elementary School (4) reported that their--

...biggest problem was getting teachers to accept a new role and other necessary changes. The teachers also have a big problem with time -- where are they going to find time for everything. Teachers have had a certain schedule that they have been following, and now they are trying to fit this new thing into their traditional schedule. Sometimes, it just doesn't work.

At Niskayuna Public Schools (46), the director of research and development stated:

More static comes from staff than from any other source. Teachers think that we are not teaching discipline the way we should and that we are coddling the child. They feel this is no way to teach children. Learning to them is a painful exercise, and it ought to stay that way.

Parents

At Grand View High School (40) it was reported that the problem was not parental interference, but parental apathy. Even the board did not express a great deal of interest in the program.

At East Elementary School (17) the principal said:

We have a lot of parent reaction. When this program was designed the parents had a liaison group involved in the planning of the program. It was a community effort to begin with. That was one of the most successful things that we did--involve the parents. I find that if there is criticism it is usually because people don't understand the program. It is not because of what is happening in the program.

Juliette Low Elementary School (13) reported that parent reaction was a problem.

Parents said things like "Do you mean the child will have a choice in his learning? Is he capable of making this choice?" So what we had to do was sell the program to the parents. It takes a real effort to show them that we are interested in more than just reading, writing, and arithmetic and that the teacher is no longer just a disseminator of facts. The child has to be taught where to go for information and how to accept responsibility for learning, and this is a difficult problem for some parents to understand because it is different from things they learned in school.

The superintendent of J. E. Gibson High School (36) said:

We have some real resistance coming from parents, especially from parents who have their children highly college-oriented. We have more organized dissent from a local medical group than from any other group. One parent who had a son taking two mathematics units said to another parent, "Do you know what is the worst thing about this new high school schedule? Both of my kids like it so much."

Students

At Parkview Elementary School (5) it was reported that:

The first 3 weeks were rough: discipline was not too good, the students watched all three teachers, and they wanted to take part in everything that went on. They didn't understand what to do. Not only did the teachers have to learn how to work with the plan, the students had to learn how to live in it. The students who came back the second year found it much easier. The teachers who taught the students whom they had last year knew exactly where they were. They did have to test new students coming in, but they also got reports from other teachers on the new ones; so they knew where to place them. This third year has been so much easier that we have really been able to move on individualized instruction. It takes just about 3 years before individualized instruction really hits.

Huron High School's (34) principal said:

One of the major problems is that students are not able to use their own structured time wisely. They are just not responsible enough, and they get themselves into trouble because they are

wandering around. However, I would say that our problems have been less and less each year.

At Brittan Acres Elementary School (9) where Project PLAN materials were being used, some of the students missed teacher assignments.

For some of them the program was too vague--they had to set their own goals, but they wanted to have someone else decide for them what they were supposed to do rather than deciding for themselves. Of course, the children don't decide entirely for themselves; it is worked out with the teacher. Even though the teacher and the student together set the goals, the children who are most uncomfortable in the project were the ones that needed authority, had probably grown up in an authoritarian background and didn't feel comfortable being on their own.

At Miami Springs High School (31) the principal made the following point:

The student at our school has to dig on his own for most of what he learns and the teacher merely guides him. Naturally, this is going to create some discomfort for traditionally oriented students. In fact, sometimes these students say that their teachers aren't teaching them anything. Of course, it depends on how you define teaching. Some students come up with the idea that, if a person isn't standing up in front of a group making statements, then it is not teaching. This is particularly true since we have tried to implement these self-instructional packages of materials.

The director of the Nova Schools (44) said:

Not every student can operate in this kind of school. I would recommend that any district that has only one small school ought not to change the whole district at one time, but to take a segment of the school and individualize it, and gradually move towards an individualized program. A place should always be left for those kids who need to be seated, constantly watched, and constantly told what to do.

Materials

At Huron High School (34) the principal replied, when asked about the problems he had encountered, "This is one of the great curses--we don't have the material." He went on to say that he would rather pay teachers during the summer to develop materials than to buy materials over the counter. He deplored some of the materials at the high school level which were not satisfactory for individualized instruction. This was one of the complaints from the teachers:

You need different kinds of materials, books, pamphlets, filmstrips, overlays, records. Assuming that this is true you are going to have to come up with money for whatever you need. We still are not as well equipped as we would like to be. We have robbed our textbook budget of $10,000 and we spent every nickle of our Title II money. We scrounged money every place we could get it, and we bought all kinds of materials, books, visuals, tapes.

However, we bought very few films, and we don't buy one textbook for every student any more. I would say that this is a problem because the teachers are textbook-minded. The students have been spoon fed for years and they are accustomed to having that textbook in their hands.

At Urbandale High School (28) the principal said:

It costs more to run a program like this mainly because you need more staff and more materials. We feel that if we have a weakness in our program right now it is the fact that our library doesn't contain enough materials for our type of program.

At Haxtun High School (41) the principal said:

I think that one of our biggest problems is to try to find individualized materials. If they are available we certainly have not been made aware of them. There is a definite need on the part of some group to develop more materials that can be utilized for individualized instruction.

Miscellaneous

At John Murray Junior High School (35):

There was a very difficult period in initiating the individualized instructional program. A persistent problem was that of communication, both with parents and internal communication among staff. We found that many of the teachers and teaching staff were resentful. They were critical within the community and the school system. I think that probably one of our strengths has been that our communication with the school board on the project has been good. We did a poor job with everyone else.

At Cashton Elementary School (24) an administrator remarked:

We should have included administrators in our workshops and exposed them to the nature and requirements of individualized instruction. This would have kept them informed as to what we're doing and given them an opportunity to see the program before we got into it.

Some problems were reported with State departments and accrediting associations. One school reported:

I don't remember all of the exercises that we went through to get to use our grant money to bring in consultants, but I remember we finally had to put pressure on individual State board members to get the State department of education to give permission to go ahead.

In another situation the school said that it...

...had to fight the accrediting association and other high schools in the city. Everything had to be approved by all the other high schools on the curriculum council. To depart from established policy in a city school system was almost heresy, and it is that kind of problem that causes frustration when one is trying to do something different.

PIP

No. 16I

RECOMMENDATIONS ON IMPLEMENTATION PROCEDURES

After two extensive studies of instructional change, Dr. Henry M. Brickell wrote*:

Major instructional innovations are introduced by administrators, not by teachers. An administrator is powerful because he can marshal the necessary authority, if not the necessary leadership, to precipitate a decision. He may not be, and frequently is not, the original source of interest in a new type program; but unless he gives it his attention and actively promotes its use, it will not come into being. The control center of the school, as things are managed today, is the administrator.

In the study from which this report was derived, 46 school districts which had made significant changes in their instructional programs were visited. In 40 of them, the source of the change was directly attributable to an administrator, superintendent, assistant superintendent, principal, or a curriculum director or his equivalent. In two instances, teachers played the key role. In the remaining four locations large-scale research and development projects were involved and had requested the school's cooperation. Even in those instances the school administrator had played a key role in introducing the new instruction program.

With reference to individualized instruction as an innovation, the first question the administrator might ask is: "Do the new procedures now called individualized instruction merit adoption?" In the first phase of this study nearly 1500 educators in key positions were contacted. Not a single one raised the question, "Why should a school individualize its instruction program?" It would appear that there is almost universal acceptance of the principle that children differ, and that those differences should be accommodated by differentiated learning experiences. Most schools have avowed in their objectives that it is their purpose to provide for those differences. But realistic observers acknowledge that both the content and method of most schools (and colleges) is fixed, and the learner adapts to the curriculum and the procedures of the instructor, rather than the program adapting to the unique characteristics and needs of the learner.

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*Meierhenry, W. C., ed., *Media and Educational Innovation*. Lincoln, Neb.: University of Nebraska Press, 1964, p. 256.

CONSIDERATIONS

If the school administrator believes that programs should accommodate the requirements of learners, and that present programs do not accommodate learners to the degree that they should, then it is incumbent upon him to determine whether new procedures merit adoption. It should be borne in mind that the essential elements in individualized instruction procedures include, but are not necessarily limited to the following: (1) orienting instruction for individuals, rather than groups or classes, and (2) pacing instruction for individuals, rather than groups or classes.

In making his decision it is suggested that the administrator consider the following observations of those who already have adopted the new procedures:

- There is little evidence to indicate that the individualized procedures will achieve existing skill and content objectives more effectively than traditional group-oriented procedures.

- Present adoptors believe that individualized procedures are essential for achieving new kinds of objectives related to the learner's self-concept, motivation toward learning, and development as a person; but they have only anecdotal and testimonial evidence to support their beliefs.

- There is some documentation and a consensus that traditional disciplinary problems associated with inattention, boredom, and disinterest are alleviated with individualized procedures.

- There is some evidence that some children and young people have difficulty in adapting to individualized procedures which require them to assume additional responsibility for their education. The reports of teachers and administrators suggest that individuals with emotional, intellectual, and/or motivational deficiencies are most inclined to experience difficulties.

- There is a consensus that most children and young people prefer individualized procedures over traditional group-oriented procedures--once they have had an opportunity to experience them in an effective program.

- There is some evidence that some teachers have difficulty in adapting to individualized procedures. The reports of administrators suggest that teachers who have a strong commitment to teaching a prescribed content from an academic discipline are most inclined to experience difficulties.

- Additional planning time and training are required by many teachers to implement individualized procedures. Most administrators recommend in-service training because of the relationship between training requirements and specific procedures adopted by a school. Either additional resources must be obtained or existing resources must be reallocated to acquire such training.

- Parents need to be informed of the new procedures and the reasons for them. Most administrators suggest that, at least during the time a

program is in transition, parents be afforded the opportunity to keep their children in traditional group-oriented programs.

RECOMMENDATIONS

The 10 items enumerated were cited by school administrators, teachers, or board members. If there were minority opinions they are also identified.

1. The first objective should be the development of a plan or proposal, which is eventually approved by the board. The first step in this activity should involve the selection of a consultant by a carefully selected group of teachers and administrators. This group might be a standing curriculum committee or a specially selected planning committee. There is consensus that all schools in a district should be involved in the initial activities in order that there be no "surprises" at some future date. The purpose of the consultant is to provide any additional services they desire. The consultant should have the capability to stimulate an already select group and alert them to the potentialities of the new procedures. The philosophy underlying individualization and the many alternative procedures should be clearly understood by the planning committee. One of the most likely additional services to be performed by a consultant is to address the board, a citizens group, or other teacher groups as determined by the planning committee. The philosophy of individualization must be accepted by everyone involved before a specific plan or proposal is presented. When it has been agreed that planning should proceed and that the philosophy of individualization is desirable, then the first step has been taken. The remaining steps in developing a plan or proposal are dependent upon local factors. Certainly the planning group will want to share information which is new to them and receive reactions from those who must eventually implement approved plans.

2. The plan should be a modest one, not threatening to board, teachers, or community. There is consensus among adopters that no attempt should be made to individualize a total program at one time. The problems associated with a total change-over are too numerous and complex to attempt without massive support. It is recommended that voluntary schools be selected to initiate the program, and that voluntary teachers within schools be selected to form pilot classes. Progress should be made "piece-meal." Experience has indicated that there is a snowballing effect and that progress is rapid because of student enthusiasm which is passed along to parents provided, of course, that leadership is adequate. Several administrators report that a healthy competitiveness develops among schools, and some nonselected schools establish modest programs with existing resources.

3. The single most essential element implementing a plan is additional training and planning time for teachers and administrators. Several administrators recommend travel for those who are selected to conduct pilot programs in order that they may observe individualized programs in action. Most teachers need to develop new skills in diagnosis and prescriptions. Administrators must understand the requirements of the new program in order to give them proper support and administration. Teachers and administrators selected for initial training should possess characteristics

which will enable them to be used as leaders in later inservice training programs. Administrators report that the type of training needed to implement specific procedures are not available from other sources at the present time. Hopefully teacher and administrator preservice training programs will be developed to fill this need.

4. The general sequence of development is (a) teachers, (b) the board, and (c) parents and students. When a cadre of teachers is qualified and prepared to implement pilot programs, the board should be informed and kept informed of all developments. As students begin to get involved in the program, they can accelerate information dissemination to parents and other students. However, an experienced administrator advises that if it is essential to get information into the home -- mail it. Bulk mailing rates are reasonable and most effective in assuring delivery of a message.

5. Staff training and planning time should be initiated well before an attempt is made to implement even pilot programs. The minimum time, under ideal conditions, is one summer; but most administrators recommend a full year of preparation. In addition to acquiring new knowledge and skills, teachers must select and prepare new materials and practice the administration of these materials until they develop a competency comparable to present group-oriented procedures. Administration training need not be as extensive initially.

6. A second and almost equally essential element needed to individualize instruction is additional materials. Most schools visited reported that they acquired the additional materials by **reallocating existing rather** than obtaining additional resources. There is a minority report here. A few administrators stated flatly that individualized instruction takes *additional* resources to acquire the materials and provide needed training for staff. Others stated that they did have *additional* resources to initiate their programs, but if they had known when they started what they know now, they could have made the transition by reallocating existing resources. Most schools received board approval but little or no additional resources, and did in fact reallocate existing resources.

The most frequently mentioned change was in the acquisition of textbooks for each student. Practically every school visited redistributed thousands of dollars from its textbook budget to other materials. Because of new procedures they eliminated substitute teachers, which in their opinion saved orienting time and resulted in a more effective program. They reduced or eliminated their standardized testing programs on the basis that the results were not adequately used to warrant the expense. They avoided buying materials that were ineffective, infrequently used, and which had not been previously tested or tried out by teachers. They made greater use of existing audiovisual equipment. Instead of buying items desired by individual teachers, they centralized equipment where students could use what was available whenever necessary. They used many more teacher-produced materials, which were considered to be better for meeting individual learner needs. Other schools reported reducing

the number of students retained in each grade (in one school from 40 down to 2), eliminating Saturday and summer workshops, which under the new procedures could be accommodated during the school day. Some schools acquired additional teacher aides instead of adding professional staff, and existing staff was more effectively utilized in the new procedures. In any event, and regardless of the nature of the reallocation, existing resources were used to implement the new procedures. Of course, there were expediencies; but if additional resources can be obtained, program effectiveness can be enhanced.

7. Many administrators advised using a "catalyst" or administrative device on which to launch new programs. They advised, "You can't change your program, your teachers, your people, your curriculum, and just say it's going to be different tomorrow. First you change what you can; then you gradually change the people, and finally you change the curriculum." Items frequently mentioned that were feasible to change without long delays were:

   - *Instructional materials or instructional resource centers.* The development of such facilities embraces both traditional and individualized programs.

   - *New time schedules.* The new individualized programs do not require bells ringing every 40 to 50 minutes, and variable amounts of time are being used effectively in traditional group-paced instruction.

   - *Redesigning space.* Many schools are using larger areas for traditional group-paced instruction, and if new facilities are being constructed, or a few walls can be removed to create larger spaces, the larger areas permit more effective staff utilization in individualized programs.

   - *Team Teaching.* Teaching teams are being used successfully in traditional group-paced instruction, and multiple teachers in a learning area permit more effective staff utilization in individualized programs.

   Changes of the type listed above are largely administrative in nature in that they do not change significantly the learning experiences being afforded learners, but they do help set in motion processes that can lead to significant changes in instructional programs.

8. Parents should be involved in the program to the degree that they will consent. This is necessary for two reasons. First, their support and endorsement is essential; and when they understand effective individualized programs, their endorsement is almost unanimous. And second, their active contributions in preparing materials and performing clerical and administrative functions can be most facilitative in establishing and operating individualized programs.

9. There should be no extra compensation for those teachers involved in establishing pilot programs unless they are contracted for extra time (e.g. week ends and summers). Because extra work is often involved in establishing a new program, some schools have provided extra compensation to those teachers involved in it. This has proved to be a source of irritation among other teachers not involved in the program, and the practice is not recommended.

10. Outwardly, the appearance of individualized instructional programs is not very different from traditional programs -- other than children seem to be more involved in what they are doing, and teachers are not trying to keep the attention of the class. This fact suggests that it may be prudent not to seek a great deal of publicity nor to stress differences and changes in the traditional programs. Too often publicity has been used for purposes other than providing information to the community, and this frequently has produced negative reactions rather than positive ones. It is recommended that the school have no purpose other than to provide children the best education possible with available resources. The differences between individualized instructional programs and traditional programs should be minimized.

IDRIP

CASE STUDIES

No. 16J

The 46 schools or school districts whose individualized instructional programs were surveyed for this study have been categorized under the following settings:

- Elementary schools
  - Urban
  - Suburban
  - Rural - large school district
  - Rural - small school district
- Secondary schools
  - Suburban
  - Rural - large school district
  - Rural - small school district
- Articulated programs
  - Urban
  - Suburban

The school administrator can most effectively use this document by identifying (1) the setting most comparable to his own and (2) the area(s) of emphasis in which he is most interested and concerned (see last column). He should then be able to pinpoint an individualized instructional program applicable to his situation.

Case studies of each of the 46 programs have been prepared (see sample enclosed), and may be ordered from the ERIC Clearinghouse on Educational Media and Technology, Institute for Communications Research, Stanford University, Stanford, California 94305. An order blank is also enclosed for your convenience in ordering.

ELEMENTARY SCHOOLS

Urban Setting

Case study number	Location	Grade or age levels	Emphasis
1	Downey Elementary Harrisburg, Pennsylvania	K-6	Individually Prescribed Instruction
2	University Elementary Los Angeles, California	(ages) 3-12	Diagnosis and prescription
3	G. S. Skiff Elementary Phoenix, Arizona	1-6	Education Center
4	Pacoima Elementary Los Angeles, California	K-6	Student tutors
5	Parkview Elementary Salt Lake City, Utah	K-6	Adapting materials to I.I.

Suburban Setting

6	Matzke Elementary Cypress, Texas	K-3	Basic and applied skills
7	Lakeside School Merrick, Long Island, N.Y.	K-6	Multidiscipline learning
8	Mary Louise Aiken Elementary West Hartford, Connecticut	K-6	Independent learners
9	Brittan Acres Elementary San Carlos, California	K-6	Project PLAN
10	Parkside Elementary Murray, Utah	K-6	Getting started in I.I.
11	Martin Luther King Jr. Elementary Evanston, Illinois	K-5	Teaching teams
12	Meadow Moor Elementary Granite School District, Utah	K-6	Optimum staff utilization
13	Juliette Low School Arlington Heights, Illinois	K-5	Learning Center
14	Kahala School Honolulu, Hawaii	K-6	Independent study
15	Granada Community Corte Madera, California	K-6	Prescribing individual programs
16	Shaw View School Phoenix, Arizona	1-8	Individual curriculums

Rural Setting -- Large School District

Case study number	Location	Grade or age levels	Emphasis
17	East Elementary Tooele, Utah	K-6	Continuous Progress Plan
18	Wilson Elementary Janesville, Wisconsin	K-6	R & I Unit
19	Franklin Elementary Greeley, Colorado	K-6 (plus 4 yr. old Head Start)	Personalized teaching
20	Southside School Durham, North Carolina	1-3	Individual growth
21	Barnsley Elementary Rockville, Maryland	K-6	Learning stations
22	West Dover Elementary Dover, Delaware	1-4	Individually Prescribed Instruction

Rural Setting -- Small School District

23	L. E. Berger Middle School West Fargo, North Dakota	5-6-7-8	Low cost I.I.
24	Cashton Elementary Cashton, Wisconsin	K-8	I.I. in conventional classrooms

SECONDARY SCHOOLS

Suburban Setting

25	Skokie Junior High Winnetka, Illinois	6-7-8	Learning laboratory
26	Oak Avenue Intermediate School Temple City, California	7-8	Objectives
27	Southwest High Green Bay, Wisconsin	9-12	Learning how to learn
28	Urbandale High Urbandale, Iowa	10-12	Relevance in education
29	Harry A. Burke High Omaha, Nebraska	10-12	Investing time wisely
30	Hillsdale High San Mateo, California	9-12	Improving basic skills

Suburban Setting

Case study number	Location	Grade or age levels	Emphasis
31	Miami Springs High Miami Springs, Florida	10-12	Freedom of choice

Rural Setting -- Large School District

32	John Murray Jr. High Pendleton, Oregon	7-9	Changing teacher's objectives
33	Roy High Roy, Utah	10-12	Independent study
34	Huron High Huron, South Dakota	10-12	Getting started in I.I.
35	John H. Glenn Jr. High San Angelo, Texas	7-9	Organizational innovations
36	J. E. Gibson High McComb, Mississippi	9-12	One subject at a time
37	Melbourne High Melbourne, Florida	10-12	Nongraded curriculum
38	Milton Junior High Milton, Pennsylvania	6-7-8	Multimode instructional Programs
39	Kauai High Kauai, Hawaii	7-12	Reading

Rural Setting -- Small School District

40	Grand View High Grand View, Idaho	10-12	Learning Resource Center
41	Haxtun High Haxtun, Colorado	9-12	I.I. in career selection

ARTICULATED PROGRAMS

Urban Setting

42	Duluth Public Schools Duluth, Minnesota	K-14	Functional total program
43	Punahou School Honolulu, Hawaii	K-12	I.I. by individual teacher

Suburban Setting

Case study number	Location	Grade or age levels	Emphasis
44	NOVA-South Florida Educational Center Fort Lauderdale, Florida	1-14	Learning activity packages
45	DeKalb County Schools Decatur, Georgia	K-12	Centralized sciences facilities
46	Niskayuna School District Schenectady, New York	K-12	Self-directed instruction

IPRIP

No. 16K

MATERIALS FOR INDIVIDUALIZING INSTRUCTION

Following are some of the materials currently being used by schools which have individualized their programs. The materials are classified by subject area (reading and language arts, mathematics), type (audiovisuals, films), and a separate category for materials specially designed and developed for individualizing instruction. Only the title and the name and address of the publisher of the materials are listed.

Reading and Language Arts

Basic Reading Program, Harper and Row Publishers, Inc., 49 E. 33d St., New York, N.Y. 10016

Basic Reading Series, Science Research Associates, 259 E. Erie St., Chicago, Ill., 60611

Checkered Flag Series, A Part of the Basic Instructional Program for Slow Readers, Grades 7 and 8, Field Educational Publications, Inc., 609 Mission St., San Francisco, Calif. 94105

The Deep Sea Adventure Series, A Part of the Basic Instructional Program for Slow Readers, Grades 4-6, Field Educational Publications, Inc., 609 Mission St., San Francisco, Calif. 94105

Educational Development Laboratories Study Series, Educational Development Laboratories, Inc., A Divison of McGraw-Hill, Inc., 284 Pulaski Rd., Huntington, N.Y. 11744

Galaxy Series, Scott, Foresman & Company, 1900 E. Lake Ave., Glenview, Ill. 60025

Language Experiences in Reading, Encyclopaedia Britannica, Inc., 425 N. Michigan Ave., Chicago, Ill., 60611

Macmillan Reading Program, Macmillan Company, 866 Third Ave., New York, N.Y. 10022

McGraw-Hill Webster Classroom Reading Clinic Kit, McGraw-Hill Book Company, 330 W. 42d St., New York, N.Y. 10036

The Morgan Bay Mysteries, A Part of the Basic instructional Program for Slow Readers, Grades 4-6, Field Educational Publications, Inc., 609 Mission St., San Francisco, Calif. 94105

Peabody Language Development Kits, American Guidance Service, Inc., Publishing Bldg., Circle Pines, Minn. 55014

The Read Series, American Book Company, 450 W. 33rd St., New York. N.Y. 10001

Reader's Digest Skill Builders, Educational Division, Reader's Digest Services, Inc., Pleasantville, N.Y. 10570

Reading for Meaning Series, Houghton Mifflin Company, 2 Park St., Boston, Mass. 02107

Reading 360 Series, Ginn and Company, P.O. 191, Boston, Mass. 02117

The Roberts English Series, Harcourt, Brace and World, Inc., 757 Third Ave., New York, N.Y. 10017

Sounds of Language, Holt, Rinehart and Winston, Inc., 383 Madison Ave., New York, N.Y. 10017

Specific Skill Series Kit, Loft, Barnell, Ltd., 111 S. Centre Ave., Rockville Centre, N.Y., 11570

Spelling and Writing Patterns, Follett Educational Corporation, 201 N. Wells St., Chicago, Ill. 60606

Sullivan Reading Program, Webster Division, McGraw-Hill Book Company, 330 W. 42d St., New York, N.Y. 10036

Webster Reading Cards, Webster Division, McGraw-Hill Book Company, 330 W. 42d St., New York, N.Y. 10036

Wildlife Adventure Series, A Part of the Basic Instructional Program for Slow Readers, Grades 4-6, Field Educational Publication, Inc., 609 Mission St., San Francisco, Calif. 94105

Mathematics

Arithmetic Concepts and Skills, Addison-Wesley Publishing Co., Inc., Reading, Mass. 01867

Cuisenaire Rods, Cuisenaire Company of America, Inc., 12 Church St., New Rochelle, N.Y. 10805

Elementary Mathematics, Patterns and Structure, Holt, Rinehart, & Winston, Inc., 383 Madison Ave., New York, N.Y. 10017

Greater Cleveland Mathematics Program, Science Research Associates, 259 E. Erie St., Chicago, Ill. 60611

Specially Developed Materials

A Statement of Skills and Objectives for the Wisconsin Prototypic System of Reading Skill Development, Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, 1404 Regent St., Madison, Wis. 53705

An Individualized Spelling and Language Arts Program, Wilson School, Janesville, Wisconsin, and the Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, 1404 Regent St., Madison, Wis. 53705

Continuous Progress Plan Materials, Utah State Department of Public Instruction, Division of Research and Innovation, Salt Lake City, Utah 84111

Individually Prescribed Instruction Materials, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, Pa. 15213 and Research for Better Schools, Inc., 1700 Market St., Philadelphia, Pa. 19103

Lessons for Self-Instruction in Basic Skills, California Test Bureau, Del Monte Research Park, Monterey, Calif. 93940

Project PLAN Materials, Westinghouse Learning Corporation, 5801 Annapolis Rd., Bladensburg Md. 20710

Teacher Aides: Handbook for Instructors and Administrators, University Extension, The University of Wisconsin, Madison, Wis. 53706

The Wilson Manual for Individually Guided Reading, Wilson School, Janesville, Wisconsin, and the Wisconsin Research and Development Center for Cognitive Learning, University of Wisconsin, Madison, Wisconsin 53706

Winnetka Curriculum Materials List, Winnetka Public Schools, Winnetka, Ill. 60093

Winnetka Goal Record Card, Winnetka Public Schools, Winnetka, Ill. 60093

Audiovisual

Encyclopaedia Britannica Kits, Encyclopaedia Britannica Inc., 425 N. Michigan Ave., Chicago, Ill. 60611

McGraw-Hill Phono Visual Charts, McGraw-Hill Book Company, 330 W. 42d St., New York, N.Y. 10036

Wollensak Teaching Tapes, Math, 3M Company, St. Paul, Minn. 51101

Films

Some Principles of Nongrading and Team Teaching, Academic Communications Facility, University of California, Berkeley, Calif. 94720

The Summer Children, Academic Communications Facility, University of California, Berkeley, Calif. 94720

This is a Laboratory School, Academic Communications Facility, University of California, Berkeley, Calif. 94720

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CURRENT ERIC DOCUMENTS ON INDIVIDUALIZED INSTRUCTION

The following documents are among those recently entered into the ERIC system, indexed under the descriptor (search term) *individualized instruction:*

A Guide to a Model of Teacher Training for the Individualization of Instruction. ED 035 609. 42 pp. MF - 25¢; HC - $2.20.

Enhancing Individuality in Learning. ED 035 199. 12 pp. MF - 25¢; HC - 70¢.

Henry B. duPont Middle School. Alexis I. duPont School District. ED 035 255. 23 pp. MF - 25¢; HC - $1.25.

An Individualized Reading Program. ED 034 667. 11 pp. MF - 25¢; HC - 65¢.

A Program of Teacher Development for a System of Individualized Education. ED 034 729. 12 pp. MF - 25¢; HC - 70¢.

Special Problems of Evaluation Activities in an Individualized Education Program. ED 034 710. 7 pp. MF - 25¢; HC - 45¢.

Criteria for Stating IPI Objectives. ED 036 166. 5 pp. MF - 25¢; HC - 35¢.

Degree of Implementation of Individually Prescribed Instruction. Guide for Interpretation of Results: Fall, 1968. ED 036 170. 9 pp. MF - 25¢; HC - 55¢.

Copies of these documents may be obtained in microfiche (MF) or hard copy (HC) from the ERIC Document Reproduction Service, 4936 Fairmont Blvd., Bethesda, Maryland 20014 at the prices indicated in the citation.

A person wishing to broaden his search of this topic may do so with the following related ERIC descriptors: individualized programs, individual activities, individual needs, individual study, individualized reading, individual tests, independent study, individual characteristics, individual development, individual differences, individualized curriculum, individually prescribed instruction, multimedia instruction, special education, television instruction, tutorial programs, and tutoring.

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